Assessing the outcome of the potential entrance of Greece in the energy map as an energy producing state and/or as an energy transit hub for itself and for the EU.

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Abstract

In light of the new hydrocarbon reserves in the Eastern Mediterranean for Greece, as well as the exploitation of the Greek reserves that might exist in its territory and marine area many possibilities arise. Along with the possibility of Greece becoming an energy transit hub, the changes and new conditions this scenario would bring for Greece, the European Union, their relation and their relations with third countries has to be considered. International relations, geopolitics of energy and energy globalization are interrelated and of high importance for every contemporary nation state. However, it appears that the literature around energy globalization is rather limited, despite the role it plays for the well-being of states and its primacy in the international political agendas. The international organizations as well as regional organizations such as the EU have forwarded a large number of treaties and legal agreements to regulate the energy market, reduce CO2 emissions and tackle climate change. However, it is important to point out that specific states are more competitive than others in the international energy market and have different needs, aims, weaknesses, dynamics and perspectives on the matter. Attempting to approach the subject with a focus on Greece as a case study, this paper shall attempt to assess the aforementioned factors. In particular, the study will start with a historical analysis of the long and complex history of Greece with regards to hydrocarbon reserves, followed by any market. Questions with regard to exploitation and availability of resources will be the main research question, which will be answered through a combination of a literature review, along with qualitative research using interviews as primary data.

The essence of the research is to examine the geopolitical impact of energy, therefore proving the significance of energy and its impact on states, their behaviour and well-being is one of the key findings, since energy can lead to dynamic alternations on states that own, produce and consume energy, as well as on the transit states. Another important finding is the overall energy insecurity of the EU, due to its high dependence on a single energy supplier, therefore its need for alternative sources and suppliers in order to establish energy security. However, while examining the alternative options of the EU, it became apparent that the alternatives are few and all

with their own distinct problems and that the complete replacement of Russia is impossible.

Another finding of this research is that the Eastern Mediterranean corridor and the possibilities that arise from it can offer to the EU a very promising and safer new supplier and that there is a role for Greece in this scenario as well. However, further findings are not very optimistic when it comes to the transition of Greece to an energy producing state. The Greek exploratory program is currently on a primary level still an it is still very unclear whether the state can become an energy producing state. Even so, the state's potential of becoming an important transit hub is very real and by taking the right measures, making the necessary moves and applying the correct policies, this potential can become a reality very soon, a prospect that would overall upgrade the Greek state's role in the EU and within its region.

Triggering point of this research was the overall lack in literature with regards to Greece, its hydrocarbon reserves and the prospects that were opening up for Greece after the Eastern Mediterranean discoveries, so main goal was to fill in this gap, but also to create new questions through the in depth analysis. The fact that data on the subject matter change constantly because it is an on-going condition, can not only provide food for thought to policy-makers but also trigger more researchers to try and continue on the research.

Keywords: energy, energy market, Greek energy policy, hydrocarbon, climate, resources, natural resources

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Bb: Billion Barrels

Bcm: Billion Cubic Meters

BEMIC: Baltic Energy Market Interconnection Plan

CEER: Council of the European Energy Regulators

CEF: Connecting Europe Facility

CEP: Common Energy Policy

CERDS: Charter of Economic Rights and Duties of States

CESEC: Central East South Gas Connectivity

CIEP: Clingendael International Energy Programme

DEPA: Greek Public Gas Company (Dimosia Epixeirisi Aeriou)

East-Med: Eastern Mediterranean Pipeline

EC: European Commission

ECSC: European Coal and Steel Community

EED: Energy Efficiency Directive

EEZ: Exclusive Economic Zone

EPBD: Energy Performance of buildings Directive

EEPR: European Energy Programme for Recovery

ENP: European Neighborhood Policy

EU: European Union

FSRU: Floating Storage Regasification Unit

GDP: Gross Domestic Product

GHG: Greenhouse Gas

HELPE: Hellenic Petroleum

HHRM: Hellenic Hydrocarbon Resources Management

IAP: Ionian-Adriatic Pipeline

IEA: International Energy Agency

IGA: Intergovernmenal Agreements

IGB: Interconnector Greece- Bulgaria

IGME: Institute of Geology and Mineral Exploration

IOC: International Oil Company

IR: International Relations

ITGI: Interconnector Turkey- Greece- Italy

Km: Kilometers

LNG: Liquefied Natural Gas

Mcf: Million Cubic Feet

MOU: Memorandum of Understanding

MR: Mediterranean Ridge

Mtoe: Million Tonnes of Oil Equivalent

NATO: North Atlantic Treaty Organization

NGO: non-governmental organization

NIS: Newly Independent States

NNGS: National Natural Gas System

NOC: National Oil Companies

NSI: North South Interconnections

NSCOGI: North Seas Countries' Offshore Grid Initiative

OECD: Organization for Economic Co-operation and Development

OIES: Oxford Institute for Energy Studies

OPEC: Organization of the Petroleum Exporting Countries

PEF: Pentalateral Energy Forum

SCPX: South Caucasus Pipeline Expansion

SCI: Specific Concentration Index

TANAP: Trans-Anatolian Pipeline

TAP: Trans Adriatic Pipeline

Tcf: Trillion Cubic Feet

Tcm: Trillion Cubic Meters

TTIP: Transatlantic Trade Investment Partnership

UN: United Nations

UNCLOS: United Nations Convention on the Law of the Sea

US: United States

USA: United States of America

USGS: United States Geological Survey

YPEKA: Ministry for the Environment and Energy (Ypourgeio Perivallontos kai Energeias)

Chapter 1

Introduction

Energy is one of the most fundamental sectors that influence all states' behavior and shape their relations towards other states and partners. The energy market, is a highly competitive sector and it is very closely related to the states' interests, being dependent on their geography and resources and able to also trigger fundamental alternations to the international system and the balance of power. Energy's importance stems from the fact that every aspect of the everyday life, from individual households to state institutions, including multinational companies and large factories function with the use of energy. Even though, yet, everyone needs it, only few have direct access to it. As a result, almost automatically those who own it, the producers, have a significant advantage compared to the ones who need it, the consumers. Of course, due to the way that the market has been shaped, this relation (producer-consumer) has been somehow balanced, because as much as the consumers need the producers in order to run their economies, the same goes for the producers as well (Yaeger et al, 2012).

This study will attempt to answer four key research questions. Firstly, how significant is the role of energy to International Relations and to geopolitics. Secondly, whether is there a possibility for Greece to become an energy-producing state according to the data and knowledge that we have up until the time that this research was being conducted. The third research question relates to the developments in the Eastern Mediterranean after the discoveries of vast amounts of hydrocarbons and how these developments can positively affect Greece and assist at becoming an energy transit hub. The final research question is how a possible entrance of Greece in the energy game can affect the former as well as the EU.

Currently, states depend mostly on fossil fuels in order to meet their energy needs, meaning oil, coal and natural gas, but oil and gas are the main resources that influence the interstate relations, due to their high transportation capacity. Especially, the turnover towards natural gas and the fact that it is being transported either through

pipelines or by the form of liquefied natural gas (LNG), has allowed other actors, apart from the producers and the consumers, that of the transit states, therefore even more states enter constantly into the geopolitical equation.

Energy, is a great challenge for the European Union, mainly due to its high import dependency, because of its lack in indigenous resources. As a matter of fact, according to Eurostat (Eurostat 2016) 53.5% of EU's energy needs are being met by imported products. The challenge that stands out for the EU in relation to energy is energy security, a challenge that was even more highlighted after the recent crisis between Russia and Ukraine (2009). To that end, Europe has set a number of targets in order to maximize its energy security through the diversification of its suppliers and its energy mix and create a single, more eco-friendly and competitive energy market that would correspond to its current and future needs and lessen its dependence on external suppliers (EC, Green Paper, COM 105, 2006).

The Union's options in order to lessen its dependence on its current suppliers, especially Russia, are limited and each policy goal has its own distinct problems. The most realistic alternative to partnering with Russia is Azerbaijan, however it remains a fact that Azerbaijan can offer insufficient resources that cannot help the EU limit its dependence on Russia (Filis, 2017). However, based on the recent discoveries of vast hydrocarbon amounts in the Eastern Mediterranean region (Cyprus, Israel, and Egypt) there could be another and perhaps safer alternative option for the European Union provided that it can reach a multi-beneficiary agreement with those states.

One of the main targets of this paper is to examine whether or not is there a role for Greece to play in this "equation", provided that the Eastern Mediterranean Corridor becomes a reality and the Eastern Mediterranean natural gas reaches the European Market, what this role would be and, of course, what would this prospect mean for Greece. In relation to the Eastern Mediterranean Corridor, there are two scenarios that stand out for Greece. The first one relates to the transformation of Greece to a transit state for the Eastern Mediterranean gas, in order to reach to the European market through the Greek territory, either via pipeline (EastMed) or in the form of liquefied natural gas (LNG).

The second scenario is more optimistic. According to that, in addition to Greece's role as a transit state, Greece could take advantage of its own hydrocarbon

reserves and become itself a producer. This way, not only Greece's role in the Eastern Mediterranean Corridor would be further strengthened, but also its dynamics would change and, consequently, so will its relations with the European Union, third party states and most importantly the market. In this context, Greece could act as a channel for energy providence and negotiation for the whole Union and become the option that would give to the Union more flexibility in terms of energy choices and assist to achieve its energy targets. As a result, another option which could also be proven to be more cost-efficient as well, especially in terms of infrastructure arises (Nikolaou, 2012).

As it will be further discussed, in the main part of the study, apart from its international appeal, Greece has a lot to gain from such a prospect on a national level, as the country is still struggling to overcome the economic crisis that has been tormenting the country for almost a decade now, therefore can be very much benefited by large investments, as are the ones involving hydrocarbons. However, the road towards the exploitation of the Greek hydrocarbons is long, with many obstacles and disputes and questioned by many, consequently what will be presented in this essay are the facts and data that are at our disposal until now and – as far as possible – the examination of the exploitation possibility (Nikolaou, 2012).

Finally, another issue that will be examined is, that even if Greece is not selected to transport the Eastern Mediterranean gas to Europe, there is a potential that Greece can become an energy transit hub for Europe and there are already many ongoing projects that point to that direction (TAP, FLNG terminal in Alexandroupoli, IGB pipeline). Therefore, Greece is already building a new strategically reinforced status that will improve its position in Europe, in its region and probably internationally as well. However, still a key point remains its selection instead of Turkey for the transportation of the Eastern Mediterranean gas and as will be demonstrated, the options that Greece has to offer are highly competitive and very much in the game (Nikolaou, 2014).

The essence of the research is to examine the geopolitical impact of energy, therefore proving the significance of energy and its impact on states, their behaviour and well-being is one of the key findings, since energy can lead to dynamic alternations on states that own, produce and consume energy, as well as on the transit states. Another important finding is the overall energy insecurity of the EU, due to its

high dependence on a single energy supplier, therefore its need for alternative sources and suppliers in order to establish energy security. However, while examining the alternative options of the EU, it became apparent that the alternatives are few and all with their own distinct problems and that the complete replacement of Russia is impossible.

Another finding of this research is that the Eastern Mediterranean corridor and the possibilities that arise from it can offer to the EU a very promising and safer new supplier and that there is a role for Greece in this scenario as well. However, further findings are not very optimistic when it comes to the transition of Greece to an energy producing state. The Greek exploratory program is currently on a primary level still an it is still very unclear whether the state can become an energy producing state. Even so, the state's potential of becoming an important transit hub is very real and by taking the right measures, making the necessary moves and applying the correct policies, this potential can become a reality very soon, a prospect that would overall upgrade the Greek state's role in the EU and within its region.

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Structure of the study

The paper is structured in two parts: the introductory, which is the present chapter and it attempts to approach the most important issues and aspects related to the subject and explain the methodology and the second the literature review part, which is the main part, the structure of which will be briefly introduced in this very subsection. It is important to note, that the original assumptions presented above are based upon the prior knowledge and professional as well as educational background of the researcher and will be discussed under a critical perspective, using both an

extensive literature review as well as qualitative data, that of semi-structured interviews.

Coming to the main part, then, in an effort to demonstrate the significance of energy when it comes to interstate relationships, geopolitics and of course the development and well-being of states, the first part of the main part, **chapter three (3.1 Energy in the International System)** approaches the core ideas of energy. Geopolitics of energy and energy globalization are the two main concepts with which this analysis begins, since they constitute the basis of this research. As will be presented the literature with regards to geopolitics varies but it is less extensive when it comes to geopolitics of energy. Adding to that, the literature regarding the energy globalization is also quite limited, even though history has vigorously shown how decisive the role of energy can be in International Relations. Considering that an essay about energy would be extremely incomplete without a reference to the next two basic concepts, namely energy security and energy dependence, those concepts are also included and analyzed in the first part of the third chapter. Further on, after a brief search through the literature of the main theories of International Relations, the theory on which this analysis will be based on is selected, namely modified structural realism. Finally, considering that it is very important to highlight the significance of energy in the 21st century, an in-depth analysis completes this part of the chapter, where some defining phenomena of the 21st century will be assessed, in relation to energy and the dominant fuels of that era along with the way that they affect the geopolitical and international relations and international law.

The second part of chapter three is dedicated to the European Union, as energy has always been a vital concern for its member states and it was literally the triggering point for the creation of the Union as the European Community of Steal and Coal, the predecessor of the EU, funded in 1951 (ECSC 1951). Energy still remains a basic concern for the member-states, a fact that relates mainly to its high needs and the lack of indigenous resources within the Union. Further on, the paper will examine the vulnerabilities of the EU and the one that stands out would be its overdependence on external energy supplies, and then its core energy targets that, as shown, stem mainly from its vulnerabilities, consequently the most important target would be the lowering of its dependence. A more extensive analysis of EU's dependence on Russia follows, because Russia is, and it seems that will continue to be, the most important

energy partner of the Union, since its reserves are abundant and its competitiveness level very high, but also the cause of uncertainty and insecurity. Therefore, whether or not Russia will continue to be an important energy partner of the Union, the EU should no matter what, continue its diversification process and search for better alternative options that will provide the possibility to limit somehow its dependence on Russia to a more controlled extend, so for the next part there will be given a list of the current and future alternative options, which the Union can turn to, if necessary, where options such as Azerbaijan, North Africa and Iran seem to be the most promising along with the LNG option and the Eastern Mediterranean Corridor, whose importance and meaning stand out, so it is examined in more depth than the rest in a separate part. After measuring the alternative options of the Union and taking a look at its current infrastructure, the conclusion is that the most beneficial strategy for the member-states at this point would be to pursue further connection to more suppliers other than Russia through the construction of the necessary infrastructure, that will not only give them the option of more suppliers but will also motivate Russia to make investments and also trigger the competition.

The last part of chapter three, is examining the case of Greece. Greece has long history, and a past of both success and failure, with regards to hydrocarbon reserves. First, a brief chronicle of all the actions that have taken place within the Greek territory in an effort to identify the Greek resources, is being presented, that will also help the readers understand many of the weaknesses and inefficiencies of the Greek state. Even so, however, there have been some few discoveries that are already being exploited and used by the Greek state, which also show that with further and more intense surveys the potentiality of finding more and worthy of exploitation reserves is still active. For that reason, the next part is dedicated to the analysis of the areas that have the most potential of holding large amounts of hydrocarbons and that are therefore applicable for further exploration. While studying the relative literature, it seemed necessary to include a part that would explain the situation over Greece's Exclusive Economic Zone and the conditions and restrictions that it creates or not, and also a brief examination of the law that surrounds the issue of hydrocarbon exploration and exploitation, as well as Greece's position over that matter with regards to the International Law.

A key research assumption with very high significance is the fact that despite all the obstacles and the economic crisis that has been in full swing during the last years in Greece, the Greek Natural Gas system is still evolving and attracting new investments and there is lively interest for more investments in the country that include projects that will further connect Greece to the rest of Europe and bring the goal of becoming an important energy transit hub one step closer. There are even indications that Greece could become a measurable competitor of Turkey on that matter and become a more safe and stable solution for Europe. Of course, there are many weaknesses that Greece has to overcome and reforms that need to go through in order for Greece to become more welcoming towards those projects, however the overall environment seems positive.

The **fourth chapter** includes the semi-structured interviews that were conducted to their entirety as they constitute valuable material and can extend the project's reach, as the interviewees, being highly acquainted in their fields and professions, can offer not only alternative viewpoints for both the researcher and the readers, but also a clearer understanding of complex issues around geopolitics and the energy market. This chapter also includes a brief analysis of those interviews from the researcher in order to better clarify their connection to the subject matter.

The **fifth and final chapter** aims to summarize the key subjects that were approached by the researcher, collect the conclusions of each chapter in correlation with the information that was gathered during the interviews and make some conclusive remarks.

Chapter 2

Methodology

2.1 Introduction

An important starting point to every research is usually a speculation, a research question. Then, the primary objective for the researcher is the selection and design of the appropriate methodology in relation to the research question, as well as to the under-examination field (Paraskeuopoulou, 2008). According to Bryman and Bell (2007) the research question must be accurately specified, since clear and well-defined research questions enable the researcher to better identify the objectives of the research (Hair et al. 2007).

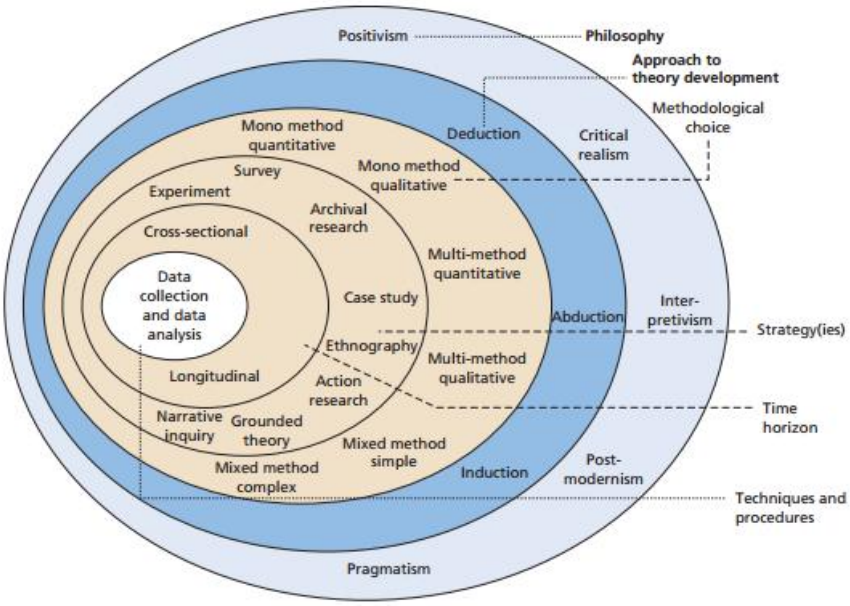
To this research, the starting point was the new hydrocarbon discoveries in the Eastern Mediterranean (Israel, Cyprus), along with the strong indications for reserves in the territory and marine area of Greece, based on secondary research of Greek and foreign literature, especially articles and publications, which have been increasingly multiplied during the last years. More specifically, it has been identified that there is a lack in relative literature with regards to Greece, its hydrocarbon reserves and the prospects of Greece after these new discoveries, mainly due to the lack of data since it is an ongoing condition, was what triggered the researcher to examine those issues closer.

Taking into account the significant role that energy plays in the current international system and the shaping of the international relations, a main assumption of this essay is that both the developments in the Eastern Mediterranean as well as the exploitation of the Greek reserves can trigger many changes and provide Greece with new opportunities on an internal and on an international level. Therefore, some main objectives of this essay are, firstly, to examine the new opportunities and prospects that are opening up for Greece in view of the Eastern Mediterranean developments, secondly, the current situation in relation to its hydrocarbon reserves and the expectations in case Greece goes along with the exploitation of its reserves and finally, what would all the above could mean for Greece, Europe, the relations between them, as well as towards other third states (Nikolaou, 2014).

2.2 Research Method

The development structure that was selected for this essay is according to the Saunder's "Onion" diagram (see below) (Saunders, 2015).

Diagram 1



According to the "Onion" diagram the first decision of the researcher-writer has to be the selection of their research philosophy, consequently the research philosophy on which this thesis will be based on is realism and more specifically critical realism, a philosophy that allows to the researcher to conduct a multilevel study and observe the importance as well as the interrelationship between the individual, the group and the organization. Another reason that led to the selection of this particular philosophy is the researcher's impression that critical realism can fit better to an inexperienced researcher. Further came the selection of the research design of the study. The researcher thought that the best suited research design to this particular study is an exploratory design, since the research does not aim to provide final and conclusive answers to the research questions, but to generate insights about them and intrigue the mind of the reader.

Next step to the development of the study, again according to the Saunder's diagram, is the selection of the approach. In this particular case the researcher selected the deduction approach, an approach that begins with a general statement/hypothesis and then examines the possibilities in order to reach to a specific, logical conclusion.

In other words, predict what the observations should be if the theory were correct. Another reason why the deduction approach to theory development is the one that appeared to be the best suited to the research is that it tries to combine both objectivity and subjectivism, facts and values, knowledge as well as empirical facts.

Saunder's diagram then proposes that the researchers should select the research method that is going to be utilized while developing their essays.

The research methods used in a research project are distinct to quantitative, which is used to measure and analyze the amount of occurrence of the under-examination phenomenon and the qualitative method, which refers to the kind and specific character of the phenomenon (Kvale, 1996). Since what is attempted is an explanation of particular research outcomes based on established theories, the methodology selected for this research is the qualitative, since it is also a methodology not guided by the researcher, but with a natural flow (Paraskeuopoulou, 2008), which will provide the opportunity to study the selected topic in depth, under today's realistic circumstances.

In particular, this thesis will adopt a qualitative approach grounded within the geopolitical domain, since it is very closely related to energy and as it happens with all qualitative studies, theories will also play an important part to this thesis as well (Reeves, Albert, Kuper & Hodges, 2008). Qualitative methods are, after all, influenced a lot by the researcher's culture and experience, therefore any conclusions reflect the researcher's stand point and are not confined to just descriptions of the phenomenon.

Moving to the next step according to the diagram's propositions, the researcher decided the strategy that was going to be followed for the study. The selected strategy is a case-study, which will allow through an in-depth analysis of one particular case, in this case Greece, to come to more general conclusions. Further on comes the selection of the time-horizon of the study, which in this case will be longitudinal, meaning that it will not concern just one particular time period and final procedure is the selection of data and the analysis of the data collected.

In every research project the researcher is expected to follow a specific theoretical model that will shape his or her analysis and help in the explanation of the research findings. In this particular project, the researcher has approached the main

themes of the survey under the light of the theory of political realism, which is one of the most debated and, at the same time, acknowledged among experts. The theory of political realism is using the traditional concepts of the nation-state and the international system that have been introduced by ancient historians such as Thucydides and Sun Tzu and developed to be able to fit any contemporary analysis by prestigious scholars like Kenneth Waltz and Hans Morgenthau (Thompson, 2015).

Based on the main theoretical assumptions of realism, the main actors in the international system are the nation states which exist in a realm called "international system". The international system is defined by "anarchy" in the sense that there is no absolute ruler or an international "police" that will regulate the main "players" in the power arena. On the contrary, the most powerful of nations are the ones who create international organizations and aim to regulate the international system with the use of international law, to be able to forward their individual and collective, when forming alliances, interests. In that sense, all nation states are rational, "selfish" entities that compete with one another for the maximization of their power and ensure their survival (Morgenthau, 2014, pp. 53-55).

In this context, geopolitics can be defined as the different actions of the rational and competitive nation states in a specific geographical area where international interests are at stake. At the same time, it is expected that, in that region, there will be power sources and resources available that become the reason of the conflict between the nations that will claim them (Dalby, 1991, pp. 260-263).

2.3 Data selection and analysis

The selection of data, has been done according to professor Yin's suggestions (Yin, 1994). In this case, data include Greek and foreign bibliography, mainly documents, archival material, articles and data collected by competent bodies (e.g. the Greek Ministry of Environment and Energy) and secondly by primary material, which concerns the semi-structured interviews conducted, as well as the opinions of three experts of the field and, of course, direct observation.

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The mere collection of primary material has been proven to be both interesting and helpful for the professional development of the researcher, especially when it comes to collecting and assessing primary data. It is important to highlight that, despite being limited in number, the three semi-structured interviews are of great value, as the interviewees included a former Minister of the Environment and Energy, Mr. Maniatis, a professor of International Relations and Director of the Research Programs of the IDIS Institute, Mr. Filis and the Honorary Director at the Ministry of Environment and Energy, Former National Representative in EU and International Energy Institutions and Former Chairman of the Energy Group of the EU Council, Mr. Pippos.

The procedure which was followed with regards to the semi-structured interviews was the following: After the completion of the writing of the thesis, the

researcher formed the questions that were going to be used for the interviews, based on the main topics of the analysis. The interviews were conducted via “skype” and while the interviewees were elaborating on their thoughts and answering the questions they were being recorded, of course, with their complete concession and after having signed the BERA protocol. Then the researcher did the transcription of the interviews, the translation and included them to their entirety in the essay as they constitute valuable material and can extend the project’s reach, as all interviewees are highly acquainted in their fields and professions and can offer not only alternative viewpoints but also both the researcher and the readers a clearer understanding of complex issues around geopolitics and the energy market. Finally, the researcher made a brief analysis of the answers received in order to better show their correlation to the rest of the project.

The most extensive part of the research was dedicated to locating and evaluating secondary data, mainly accessed through online sources (books, magazines, newspapers, reports, publications etc.), as well as the Law Library of Athens, the Library of the University of Piraeus, the Greek Foreign Ministry and the Institute of Geology and Mineral Exploration, in order to gather all the necessary information for a spherical, informed and in-depth study. Also, as the research was conducted in Greece, an EU member-state, the researcher has been able to have full online access to sources containing EU decisions, policy making, documents etc. Furthermore, taking into account the absence of actual data in regards to the hydrocarbons that potentially lie in the Greek subsoil, the research was based mainly on indications, along with publications of experts on the field.

Subsequently, when all the necessary data have been collected, the researcher begun the categorization of the available data, which was made in accordance to the thematic section to which they belonged, in order to be ready to use. There were variations of each thematic section’s importance in relation with the research questions, so there was a categorization of their importance and relevance to the research questions as well.

During the elaboration of the essay and after collecting all the above mentioned qualitative material, as with all this type of research, the next phase is the analysis of the collected data and most importantly in a way that can be proved useful and notable. The analysis of the data for this essay was thematic, so each theme was

analyzed separately but carefully so as to not expand too much on the analysis of data that would disorient the course of the essay away from the research questions. It was a very useful analytical tool as it offers a lot of flexibility (Braun & Clarke 2006). Despite the flexibility that the thematic analysis offers, as mentioned earlier, the analysis was delimited by choosing a particular theoretical framework, that of political realism. What was also very useful in using the thematic analysis was that its flexibility allowed the researcher so as to not follow the beaten track but a more journalistic approach while writing the essay, therefore the writing offers to the reader the quality of a political thriller and it can be characterized as the footprint of a photograph. The analysis and presentation of the collected data of this study is in the form of a "case study" (Langley, 1999), namely Greece. The case study is a methodology through which one can analyze a complicated matter, based on an in-depth understanding of the matter, through the extensive analyses of the available data (United States General Accounting Office USGAO, 1990).

Through this methodology, whose essence lies on the gathering of data, one may also develop a reasoned theory (Lubbe, 2003) and it is more than the analysis of events and circumstances. A case study constitutes a specialized and systematic examination of what happened, a selection of events for analysis, collection - analysis of the information available and a report of the results (United States General Accounting Office USGAO, 1990), which is what the researcher has intended to do with regards to Greece and all the energy related potentials that have recently arisen for the latter. An additional aim that led me to the selection of a case study is to demonstrate the impact that energy can bring even for a small and economically weak state, like Greece. To that end, the essay includes specific examples that demonstrate the significance of energy, especially when it comes to International Relations, the states' economy and geopolitical status and appeal.

2.4 Remarks

Further obstacles that where identified while conducting this research have become obvious while aiming to complete it. The extent of the project as well as the wide range of used material made the drafting and subsequent correction of the whole paper a challenging process. Ever since the beginning a series of difficulties have become obvious, including the lack of background knowledge on the subject matter,

which nevertheless the researcher overcame through zeal, self-discipline and sheer determination during the process. Additionally, data on Greece's reserves and the prospects with regards to the Eastern Mediterranean reserves are both in their infancy, so there were many difficulties in finding sources and collecting readily available data. Furthermore, due to the fact that the approached theme concern an on-going condition, the new data were non-stop, therefore the researcher was obliged to set limitations and decide to stop collecting any more data and just progress with the ones that were already collected.

Nevertheless, every possible methodological tool has been used in order for the researcher of the present paper to be able to claim that the key challenges have been overcome, provided that the paper aims to not only be used in an academic manner and acquaint the researcher with experience that will be later used in a potential professional career in the energy sector. After all, it appears that energy is the number one "hot" topic in international relations and issues such as Greece's and the Eastern Mediterranean's hydrocarbons, shale gas etc. are going to become priority topics for discussion of the 21st century, so it was well worth the time and effort spent (Nikolaou, 2014).

As it has already been pointed out, apart from the mere collection and assessment of secondary data (books, articles and journals), other types of data, primary ones, have been assessed and included in the research. Such data include statistics, key projects, mainly of the EU, databases and, of course, the semi-structured interviews. The interviews have been included in their entirety as they constitute valuable material and can extend the project's reach, as the interviewed persons, being highly acquainted in their fields and professions, can offer not only alternative viewpoints but also both the researcher and the readers, a clearer understanding of complex issues around geopolitics and the energy market.

Aiming at such goals and, based on the needs of the project, it became apparent from the very beginning that a strictly structured, anonymous questionnaire would not have been an option, it being used in large samples and in cases where anonymity is key to the success of the project. Second, such questionnaires would have been useful in cases where the desired outcome would be to come up with quantitative data that can be processed with the use of statistical tools. Apparently, in

this case, the researcher was looking for an opportunity to use open-end questions in order to take a step further and come up with original statements that were not going to be biased or influenced by the opinion and personal background and identity of the researcher, as it often happens in strictly organized questionnaires. As a result, the semi-structured interviews allow flexibility, more objectivity and freer expression of the opinions of the sample (Züll, 2016, pp. 3-5).

Chapter 3

Literature Review

3.1 Energy in the International System

Summary

The first part of the third chapter aims to approach the core ideas of energy. Geopolitics of energy and energy globalization are the two main concepts with which this analysis begins, since they constitute the basis of this research. As will be presented the literature with regards to geopolitics varies but it is less extensive when it comes to geopolitics of energy. Adding to that, the literature regarding the energy globalization is also quite limited, even though history has vigorously shown how decisive the role of energy can be in International Relations. Further, considering that an essay about energy would be extremely incomplete without a reference to the next two basic concepts, namely energy security and energy dependence, those concepts are also included and analyzed in this part of the chapter. Further on, after a brief search through the literature of the main theories of International Relations, the theory on which this analysis will be based on is selected, namely modified structural realism. Finally, considering that it is very important to highlight the significance of energy in the 21st century, an in-depth analysis completes this part of chapter, where some defining phenomena of the 21st century will be assessed, in relation to energy and the dominant fuels of that era along with the way that they affect the geopolitical and international relations and international law.

3.1.1 Geopolitics of energy

It has been revealed from the earliest stages of this project that the term "geopolitics" is very hard to define. In order to better understand geopolitics however, it is vital to know that geopolitics starts as a component of human geography and is intertwined with history. Human geography began as the study of the physical and social characteristics that make a region unique and later on, spatial relationships, location and regional interaction entered the equation. Today, human geography can be approached by many different perspectives and it strongly affects, if not determines international affairs (Gilmartin &Kofman, 2004).

Literature shows that it begins with the study of places, but it is completed through the understanding of the correlation of places with each other. It's the specific characteristics of each place that make it unique and determine its relations with the rest of the world. For example, questions that can be asked with regard to it can be focused on several issues like those characteristics that draw investors to some places

of the world, or how come energy is produced in some places but consumed in others. Those characteristics are a combination of social, political, economic and even environmental attributes that under close examination can give us the answer we seek and explain one place's relations with the rest (Park, 2013).

Throughout the years one can observe many different approaches towards geopolitics. For instance, in a sense geopolitics is perceived as the perpetual struggle of states to control and expand their territory (Gilmartin and Kofman, 2004). A second understanding is, that states are not the only players when it comes to geopolitics, but institutions, non-governmental organizations (NGO's), even individuals and so forth can constitute an important part when it comes to geopolitics (Colin Flint 2006, pg.16). Another perspective is that, geopolitics is more than that, it is a way of viewing and of better understanding the world (Colin Flint 2006, pg.13). For example, from a feminist point of view, geopolitics is a practice for white males and of certain class and education, therefore it cannot be objective (Haraway, 1988). In its contemporary form, geopolitics is being complemented by critical geopolitics (Ó Tuathail, 1996), which more or less examines through a critical lens the tendency of powerful states or institutions to promote certain policies, which constitute representations of their understanding of the world.

Geopolitics first started to preoccupy political analysts between the decades 1880 and 1910. During this era scholars as well as political thinkers started to realize and understand the impact that technological as well as social developments had on the international environment and its future shaping (Granieri, 2015). In classical geopolitics, states and nation-states are the key players, the competition amongst them is the key characteristic of that era and all the attention is circled around the powerful Western countries.

The discourses of geopolitics can be distinguished in four different categories (Ó Tuathail, Dalby, Routledge (ed/s) 2003), all influenced by a different chronological era, events and intellectual representatives. "Imperialist geopolitics" constitute the initial attempt to understand and interpret the influence of geography on international developments and interstate strategy. Alfred Mahan (1840–1914), was the first to point out the significance of geography in correlation with sea power on states' imperialist quests.

In continuation to Mahan's naval expansionism, Friedrich Ratzel (1844–1904) was the one to explain that states' expansionist tendency, lies on the simulation of states as living organisms, which constantly need to expand in order to ensure survival, hence constant interstate struggle cannot be avoided. In the early twentieth century, geopolitics is expressed as a form of the power to promote state expansionism and empire preservation. Inspired by the work of Mahan, Sir Halford Mackinder's (1861-1947) work, proposes a counter-movement. Although he accepts the importance of the sea in states expansionist conquests in the past, he introduces another significant aspect that determines the effectiveness of conquest and land exploitation, that of technological developments and industrialization. Important representatives of this first conceptualization of geopolitics are also Karl Haushofer (1869-1946) as well as Nicholas Spykman (1893-1943).

With the outbreak of the Cold War, a new context is being given to geopolitics, as it matures and begins to have an obvious impact on states' relationships. Through the competition between the United States and the Soviet Union for prevalence, geography now becomes closely linked to ideology. Main exponent of that context was George Kennan (1904-2005), through his "containment" doctrine, the key architect of US's Post War policy, who upgraded US-Soviet Union's antagonism from a territorial battle to an ideological one, which also laid the foundations for the development of the "Domino Theory". The ideological struggle between the democratic states against states with communist regimes led to the "Domino Theory", which was an expression of mainly the fear of the United States, that like domino more and more states might fall under the influence of the Soviet Union and its communist ideology, an era when the terms "First", "Second" and "Third" World first began to acquire meaning. Especially when it comes to developing countries, after all, there have been several examples of regional wars that have been used areas where the "tensions" between the two main powers- the USA and the USSR were being "extinguished". Energy was, after all, one of the main reasons why the Gulf crisis and the subsequent economic crisis occurred during the early 1970's as a power gap was created in the international system that had to be filled (Hinnebusch, 2003).

Later on, in the late twentieth century, scholars and researchers attempted to do their own explanations about the New World Order (post-Cold-War), an idea firstly defended by the Soviet President Mikhail Gorbachev, whose vision was a

world beyond interstate antagonism, a world of interstate cooperation, with ultimate objective the resolution of global issues under the United Nations' umbrella. After Francis Fukuyama's "End of History", where he announced that ideological battles of states had come to an end, as western democracy had won and that eventually political and economic liberalism would prevail, Edward Luttwak, was the one to foresee that interstate competition would not end, on the opposite, it would continue, but its nature would be altered. Luttwak was the one to introduce the concept of geo-economics to the world, stressing the importance that economic and trade relations would have on international relations. As a consequence of that era's theoretical evolution, another major concept was introduced, which currently unfolds throughout its substance and its effects begin to appear, the concept of globalization.

The most recent theoretical approach towards geopolitics, is focused upon the environment, "politics of environmental change" (Ó Tuathail, 2003). Geopolitical concern was initially turned towards environmental issues since the World War II onwards, when terms such as "global problems", "global security" began to gain great leverage. Events such as, the mercury poisoning at Minimata Japan, the extensive use of pesticides in the United States, oil spill accidents and peaking with Cold War's nuclear fallout, were the triggering force that enabled environmental geopolitics. Key role to this new geopolitical wave constitute worldwide environmental organizations, such as Greenpeace, who bring environmental threats to the fore and give them worldwide recognition, which ultimately creates political pressure. Therefore, once again one can observe that issues that are not political from their nature, can be so influential that become political and can substantially affect the international relations. Important adherent of this form of geopolitics is Robert D. Kaplan, writer of the article "The Coming Anarchy" (1994), where he concentrates attention to the so-called "environmental refugees", where environment is presented as the cause of chaos and state failure. But, according to Visvanathan, environment can also have a commercial value and can be used as a development indicator, if used as a resource. National resources increase national wealth as well as economic measures, such as GDP, which means they can also lead to "resource wars" and "environmental conflicts", for access and control to these resources. A descriptive example is the 1973 war between Syria, Egypt and Israel, which caused oil disruptions in Western states, when the United States first began to analyze the possibility of military

intervention, in order to ensure political stability, especially in the Middle East and ultimately ensure undisrupted oil supply from these countries to the West (Hinnebusch, 2012).

Classic geopolitics as a separate field of studies was also concerned with that important aspect, the access and control to resources, as a state's sovereignty includes its right to resource extraction and usage. To Professor Joseph S. Roucek (1902-1984), writer of several articles with geopolitical content, "geopolitics" is just a term used to "highlight the significance of territory and resources" (Dodds, 2007). Resources represent a major factor in contemporary geopolitics as well; they determine international relationships to a great degree and are the cause of the term "failed state", which is used to characterize states who fail to take advantage of their resources due to political instability.

More recent examples of that kind of conflicts, such as the Russia-Ukraine current conflict, or changes such as "the shale revolution" in the United States which has affected greatly the global energy market and has stipulated new geopolitical debates and speculation show us the critical role that energy plays when it comes to geopolitics. For instance, since the energy "boom" in the United States and its emergence as an energy producer and exporter, concern has been expressed that the United States might change its foreign policy towards the rest of the world, since its energy needs are now less dependent on external sources and its leverage in shaping its global agenda is now even higher. One basic concern is whether United States will continue to invest and promote peace and stability in the Middle East and protect sea roots used for energy transfer world widely, a shift that would also decrease the country's military spending. Another major concern is, whether the United States will be able and choose to export LNG to Europe and more specifically to Ukraine, and hence reduce Russia's leverage in the whole region or even choose, in coordination with Saudi Arabia to flood the oil market and give the final blow to the Russian economy (Pascual, 2015).

Speculations and concerns of that type, demonstrate that in geopolitics, energy can be used either as "a tool of isolationism" (Pascual, 2015) or as a weapon used to strike an opponent. However, according to the 2015 "New Geopolitics of Energy" report, energy geopolitics and energy markets are so closely connected that in order to avoid mistakes, states should examine carefully both aspects before making any

decisions. The reason is that both oil and gas are traded in global markets, therefore the possibility for any kind of changes to deeply affect any player within the system are extremely high. Consequently, in terms of geopolitics, energy can be proved to be a uniting force for states all over the globe, but if misused it could also lead to the complete destruction of economies. Greece is an example where energy will either be the solution or a further burden to its already vulnerable position (Nikolaou, 2014).

3.1.2 Energy Globalization

Throughout the study of international literature, one will come across many different definitions and perceptions for globalization, a term that has also triggered a long lasting academic debate between the supporters and the sceptics. Therefore, although many believe that the most accurate approach is the equation of globalization with economic interdependence, up to the point of referring to one global economy (Dicken, 2011), we also encounter a different interpretation, which highlights the identity and dynamics of nations and that in the end nation states and the "clash of civilizations" (Huntington, 1993) will prevail.

What is also apparent when going through the literature, is the lack of a precise definition. For instance, in an initial attempt to approach globalization, it has been described as the "widening, deepening and speeding up of worldwide interconnectedness in all aspects of contemporary social life…" (Held, McGrew, Goldblatt, Perraton, 1999). Further, according to Gidden's (1990) view, this intensification of worldwide social relations among distant places, also creates a correlation among the events that take place in different localities. In any case, the most general approach that describes globalization is that, it involves "the set of processes by which more people become connected in more and different ways across ever-greater distances" (Boli, Lechner, 2015), therefore social activity is no longer constrained within physical boundaries.

Another important observation derived from the study of literature, is the shortage of publications that connect globalization to energy. However, as it has already been observed, through the course of history, energy can be the driving force of international conflicts, from the political influence in energy producing countries and military control over international transport routes, to continental shelf disputes.

Therefore, even though the above-mentioned definitions of globalization might provide a good starting point as to how someone could approach an energy related definition for globalization, due to the emphasis that is being given to terms like "interconnectedness", "interdependence" and "intensification", they still do not offer a distinct definition for energy globalization. The lack of literature on energy globalization seems a little unorthodox, especially taking under consideration that most oil companies operate on a multinational level and represent a high proportion of international investments flow, or the ongoing increase of transnational gas pipelines and LNG terminals, constructed to further facilitate gas transportation from all over the globe, all indicators of the rising trend of energy globalization (Overland, 2015).

The initial approach towards this issue was made by R. Keohane and J. Nye (1977). Their book "Power and Interdependence", was inspired by the 1973 oil crisis which led to the increase of oil imports from the Persian Gulf to the Western countries. However, even though the already mentioned abundance of definitions for globalization, it is not until 2015 that one shall encounter an accurate definition for energy globalization (Overland 2015). In his article "Energy: the missing link in globalization", Overland defines energy globalization as "the growing interconnectedness of the world's energy supplies through the movement of growing volumes of energy over greater distances across international borders", where he also introduces an energy globalization index in order to assess its progress. In order to construct this index Overland combines three different aspects; the increased interconnectedness of energy trade relationships, the increased distances among the countries that trade energy and last but not least the energy interdependence. When putting all this information together, one is the main conclusion, that the more energy use and trade expands, the more globalized the world becomes.

As much as energy constitutes a strong factor towards a more globalized world, this also functions vice versa, meaning the more globalized the world becomes the energy sector is being accordingly influenced as well. A descriptive example would be the changes experienced during the last decades with regards to the ongoing increase of the labor mobility beyond national borders. Moving, for example, a service job from the United States to India can most certainly lead to net changes to the global energy consumption and the explanation is quite simple: the worker whose job is being moved to another country keeps consuming energy and at the same time

the person who will occupy the same position offshore will use more energy than they used to, due to higher living standards. The same goes for trade. During the last years China's exporting and manufacturing activity has grown rapidly, but when taking under consideration both the above-mentioned examples as well as its low rates of energy efficiency, the net increase of the global energy consumption is very high. International law has a very important part to play in preventing violence and abuse of energy, although, such a process requires international coordination and cooperation (Park, 2013).

3.1.3 Energy Security and Energy dependence

Energy security is another ambiguous concept of the international relations that has been widely used, analyzed and has preoccupied in depth the political world. Although many politicians around the world avoid giving a precise definition to that term when going through the related literature we come across an abundance of definitions.

The Department of Energy and Climate Change (2009), provides a basic definition for energy security, "secure energy means that the risks of interruption to energy supply are low", a definition with which many authors agree. An interruption to energy supply can have many and different causes, from unavailability of sources in order to meet peak demand, to bad weather conditions that might result to the distraction of infrastructures, political unrest as well as terrorist acts and so forth, but all have a common denominator, all are unpredictable as well as their consequences. Consequently, not being able to predict such situations means that drafting an effective action plan to avoid any implications is very hard to achieve. Again, states and organizations are the ones to take the initiative. The main indicator of a secure system is the risk, either this is a relative risk, partial or a complete disruption of energy supply. Therefore, an effective draft should be able to cover all possible disruption causes and have a complete overview of the consequences on the consumers, the suppliers and ultimately on the whole market and the economy (Park, 2013).

Others have gone one step further, by introducing filters in order to measure the level of insecurity of energy supply. A widely used and discrete definition comes from the International Energy Agency, which defines energy security as "the

uninterrupted availability of energy sources at an affordable price". The IEA introduces price as a measurement filter for energy security, a filter that has been accepted and used by many other authors as well and distinguishes energy security to long-term and short-term, where the first refers to long-term investments that ensure energy supply in accordance to economic growth and environmental sustainability and the latter refers to the ability of an immediate response of the energy system to unexpected developments. The European Commission (EC) also accepts price as an integral component when defining energy security, as it aims to ensure "the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial) […]" (European Commission).

A third effort to define energy security introduces another criterion as a measurement tool, that of the impact on the economy, the price, the market and the environment, instead of measuring the interruption rate of energy distribution or the price changes that might occur. For instance, Findlater and Noël (2010), in their effort to assess the levels of energy security of each country while studying gas supply security, they define it as "the ability of a countries energy supply system to meet final contracted energy demand in the event of a gas supply disruption". Therefore, in a way, they link the level of a country's energy security to its reflective ability to meet energy demand when an energy supply disruption occurs in a manner that would best limit the impact on the continuity of services, the market and so forth.

One very interesting amendment in an effort to provide a broader definition for energy security, was made by Wicks M. (2009), who underlines the significance of a state's "independence in its foreign policy through avoiding dependence on particular nations". With reference to the factors that indicate a state's secure energy system as specified by the Centre for Strategic and International Studies, Wicks attempts to analyze UK's security future and propose a sustainable approach towards energy security that would also limit UK's energy security concerns. Therefore, according to Wicks, in order to achieve a mixture of such an approach, it has to incorporate, among others, sources and fuels' diversification, that can offer to a state the option of switching to another energy source when circumstances require so; supplier's diversification, so that a state's options in case of an interruption are not restricted; supply routes' diversification, in order to avoid overdependence on specific

"supply corridors", as well as well-structured and "commercially-viable plans for technological improvement for the future".

Many more definitions with even more extended scopes are available throughout the related literature, as will examine later, but they all share a common idea, the importance of limiting the risks and the impacts when an energy supply disruption scenario occurs. Since the results of such case scenario can affect a broad range of the everyday life, but also the overall output of the market and a state's economy as a whole, the significance of keeping these risks at a low level is fundamental to a state's foreign policy agenda. As such, energy security incorporates an integral role to EU's energy outlook as well, as we will also examine in the following chapter.

3.1.4 Theoretical Framework

International relations' theories are based on the grouping of axioms that express doctrinal views with regards to the function of international politics and the relations among the players of the international system. They constitute interpretations of the phenomena that take place, either on a broad or a limited scale on an international level. The traditional distinction of IR theories is that between realism, structural realism/neorealism, liberalism and Marxism/structuralism and after the Cold War social constructivism was also introduced as a critique of both realism and liberalism.

The selection of the theoretical framework that best supports an analyses is initially subjective, as it depends highly on the researcher's perspective as well as knowledge, but also requires an objective glance, since it has to be in accordance with the needs of the research in progress. In order to distinguish the theoretical framework that would best accompany this analysis, the rejection of the Marxist theory is relatively easy, as it perceives the class battle as the moving force of history as well as an analytical tool. The Marxist theory interprets all events in light of the wider confrontation between the capitalist and the socialist systems and even though there have been some Marxist-inspired energy-oriented analysis (e.g. Hinnebusch, 2003), it definitely cannot correspond to a geopolitically oriented analyses as the

present, since there are no such controversies taking place within the current international system.

Another easily rejected theory is social constructivism. Social constructivism is a theory that examines the material and social context of IR. This theory is based on thoughts, ideas and norms and emphasizes the social construction of the international system. This theory promotes the idea of cooperation among states beyond the spectrum of their own interests. But when it comes to energy, this idea does not stand, as states tend to cooperate and act in accordance to their own interests and not in accordance to international norms (Park, 2013).

Liberalism, accepts a less antagonistic but cooperative international system, within which interdependent relations and economy play a critical role. One of liberalism's core elements is the idea that economic cooperation can indeed lead to deeply rooted political cooperation, especially among democratic states. Even though we could argue that a liberalist approach could best describe the current international energy market, mainly due to its high interdependence aspect, when it comes to energy security however, states do not hesitate to pursue their own interest and to be involved in conflicts and war in order to ensure their own energy security. Further, even if one attempts to examine the EU, which has been described as a triumph of the liberalist view of the world, again with regards to energy and energy security the equilibria change, as many EU member states act on their own in order to ensure their energy security, for example by signing bilateral agreements with non-member states, such as Gazprom's bilateral agreements with Germany's BASF and E.On Ruhrgas, Italy's ENI, France's Gaz de France and the Netherlands' Gasunie (Baran, 2007), (Trenin, 2008). After all, EU member states' energy mixes are rather diverse, as well as their suppliers (Baumann, 2010), with the major differences appearing between the Western European countries and the Central and Eastern ones', consequently major differences between their interests as well, is expected.

Therefore, after taking under consideration all the above, realism and most specifically neorealism, appears to be the theory that prevails and that would be the best basis for this research.

Realism is accepted as the most dominant IR theory, at least when it comes to security and conflicts study. It stems from the Greek antiquity and Thucydides and its

core assumptions are based on a pessimistic approach of the human nature, which extends to the way that states - the key actors in world politics - act within the international system, where conflict and war cannot be avoided. Due to the lack of an overarching authority within the international system it is characterized by anarchy, competition and the high-risk for war. Core idea of classical realism is “power” and the ever-present struggle to obtain it, as states’ primarily concern is to pursue their own interests, therefore distrust amongst states is another key element of world politics that the classical realism detects. Further, according to classical realism, the rules of international law have no actual importance unless they serve the interests of the most powerful states and respectively for international organizations, which are creations and tools in the hands of the most powerful, they only exist as long as there are common interests and in accordance to the power of each member-state (Baran, 2007).

The majority of the international energy related literature adopts the realist approach under the influence of four fundamental arguments:

- Accessibility and control of national resources, with energy being the most important one, since it is also a vital element of national sovereignty, it constitutes a fundamental component of national power and national interest.
- But energy resources are limited and they are depleting as the years go by, increasing the insecurity of states.
- Therefore, antagonism among states will rise as the access and control to energy sources becomes harder.
- Consequently, the rising tensions among states will almost inevitably lead to conflicts and probably even war.

Nevertheless, classical realism poses some weaknesses as well. Among these weaknesses, is the claim that foreign policy related decisions are being determined rationally, without describing the ways and procedures that lead to those decisions. Under this circumstance, however, the study and the analyses of certain issues related to the systemic pressures that the players of the international system have to go through, due to the balance of power within it, ultimately lead them to certain decisions, would not be comprehensible. Political realism aims to address all those issues and understand how and why nation-states can and must cooperate (Park, 2013). For instance, adopting that claim would not explain the reason that states enter

coalitions with powerful states, in order to defend their own interests. Also, classical realism regards the state as being the ultimate player within the system. In contrast to classical realism's view of the states' role, neorealism allows more space for agency in its approach (Nye, 2012).

Leading figure and exponent of neorealism, Kenneth Waltz (1979), clearly influenced by economic models, gives his own view by giving less attention to human nature and no account to the "ethics of statecraft" (Jackson & Sorensen, 2013). Waltz accepts the anarchical nature of the international system, argues that the internal structure of states has no significant impact on international relations and that the distribution of power between the players is what really forms the structure of the system.

Another neo-realist critique towards realism comes from Robert Gilpin (1987, 2002), who gives great emphasis to the role of the economy and stresses its critical role to national power. Consequently, for Gilpin multinational corporations, international organizations as well as NGOs (Non-Governmental Organizations) can constitute an important element in defining the developments of the international relations.

However, the neorealist approach poses some weaknesses as well. Both realism and neorealism, seem to ignore the national government's or the general state system's role when it comes to decision making and determination of the state's national interests. Robert O. Keohane was the one to propose the modification of these two theories, in order to improve them and fill in the gaps, by using elements from liberalism and modified structural realism was introduced. Modified structural realism accepts the role of the state's mechanisms in the decision-making process, in order to determine their behavior within the international system and that is the theory that will constitute the basis for this research.

The modified structural realism approach gives also another dimension to the effectiveness of the use of power. Power, is an important aspect to modified structural realism, but unlike realism that correlates power to military force and the constant pursue of more military force in order to ensure security due to the "security dilemma", this theory underlines the importance of the ability of each state to recourse to other power factors, such as economic or institutional. This new approach to power

was further extended by J. Nye, who distinct power to “soft” and “hard”, where “soft” power translates to the appeal one state has on others that would give it the advantage and the ability to influence others, the ability of “getting others to want what you want” (Nye, 2012) through persuasion and attraction and “hard” power is the use of threats, coercion or even payments in order to get others to do what you want to be done. But for Nye the ultimate use of power is the ability to combine these two together in a mix that he calls “smart power”.

3.1.5 The importance of energy in the 21st century

Energy has always played an integral role to the existence, survival and evolution of human civilizations and is probably going to have a vital role in shaping the 21st century’s societies as well. During the last two centuries fossil fuels constitute the world’s primary energy source, a variable that does not seem to change at least for the near future. One characteristic of energy that stands out, is the steady disproportion between energy demand and availability. Especially when it comes to fossil fuels, observation has shown that energy producing states (Middle East, Russia, the Caspian Sea, and Africa) tend to consume less energy than the ones that do not have the necessary indigenous resources in order to adequately fulfill their energy consuming needs (United States, Europe, Japan, China, and India). Consequently, energy has become the most major traded commodity in the world and it has to be regulated instead of becoming a taboo issue or an area of concern, especially as it can be, apart from a source of power, a weapon (Park, 2013).

The relations that have been developed among the states from all over the world due to their need to fulfill their energy needs are endless and demonstrate another important characteristic of energy, the interdependence it creates between states. This circumstance derives from the fact that energy consuming countries need the ones that produce energy in order to survive and thrive and respectively energy producing countries need the rest in order to maintain and progress their economic prosperity. Years of experience have shown that energy independence is an unrealistic aspiration and it cannot be achieved at a national level, especially in the long term. However, when a state is found in a position where it cannot maintain its well-being by relying only on its own capabilities, but need others in order to do so, its insecurity

levels rise as any state will aim to increase its power and prestige in the international system that political realism understands as the "arena" where all actors compete (Nye, 2012).

In addition to availability, however, another factor that defines energy security, everyone's everyday living standards as well as the health of national economies, is the cost. Consequently, variances in energy prices highlight even further the overall insecurity. The significantly high volumes of energy exports and imports and prices instability influence the balance of payments, thus creating high pressure to both producing and consuming states, therefore high levels of insecurity as well. Oil, in particular, being almost always the most important imported commodity, it significantly influences the national GDP and can create trade deficits. But there are economic challenges and worries for the producing states as well, like the less efficient internal use of energy and wasting the national subsidies or managing the distribution of energy within such an unstable market. Renewable energy and natural resources are also included in this field (Sorensen, 2004).

Furthermore, it has been proved that energy can constitute a strong tool in the hands of the ones who hold it. In several occasions energy has been used in order to gain political leverage, another factor that further increases states' insecurity with regards to energy. The most characteristic example used throughout the energy related literature, is the oil embargos imposed by the Arab oil producing countries on the United States and others during the 1973 Arab-Israeli war, which aimed to change their policy towards Israel. This experience was a vital lesson for the energy markets and triggered not only concern for the states' energy security but much thought on how the states would be able to mitigate such risks and react fast and effectively in case of an emergency energy cutoff. Therefore, at this point states began to take further precautions, the International Energy Agency (IEA) was created and states began to form their own strategies and action plans in order to avoid the consequences of an energy shortage that mainly included the construction of the necessary utilities in order to store energy for emergencies (Taylor, 2014).

Fairly recently, another factor that further threatens states' energy security has emerged and is related to the environmental consequences of the extensive use of energy and more specifically of fossil fuels. The constant increase of Earth's population in conjunction with the extensive use of fossil fuels for energy generation

and transportation causes the release of excessive carbon dioxide amounts in the atmosphere, which according to the experts is the cause for the overall increase of global temperatures. Therefore, the availability and the cost of energy resources is not, anymore, the only issues that states have to confront, but they also need to come up with the most environmentally efficient ways to access and use them. It is interesting to point out that climate change, a more "soft-policy issue" becomes a starting point to discuss all those more complex matters (Sorensen, 2004).

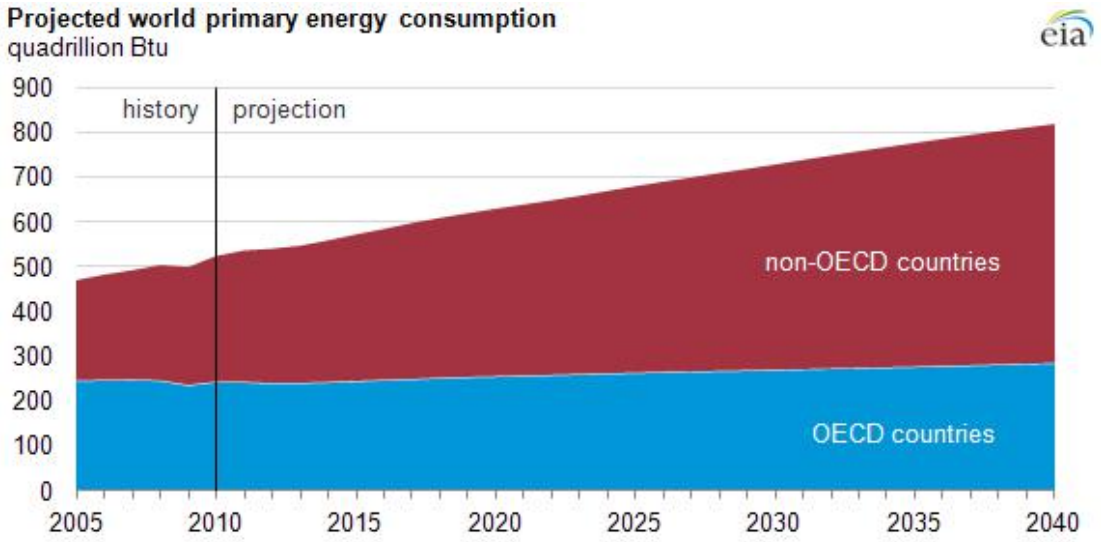
One very distinguishing point of concern over the atmospheric pollution is the constantly increasing trend of fossil fuels use from the developing countries. Energy consumption in the developed world has more or less been stabilized over the last years and currently the developed countries focus more on the use of more sustainable and environmentally friendlier options, by adopting action plans in order to reverse the situation and stop temperatures from rising. At the same time those countries through their energy policies and course have set precedents upon which they based their economic and business bloom, without any environmental constraints (Sorensen, 2004).

On the other hand, developing countries are currently utilizing these precedents in order to sketch their own strategies in their effort to expand their economies and achieve their goals. The environmental outcomes of today are heavily due to the previous strategies of the developed world, therefore developing countries are reluctant to compromise and risk their own progress by fear of the environmental consequences the world might face in the near future. Therefore, when it comes to emissions, the aforementioned claim that they should be dealt with a relative lenience from the rest of the world, since they are on a critical point of their economic development and argue that their emissions should not be measured by country but per capita. In Greece such a discussion may be even more complex (Nikolaou, 2014).

Over the last decade and due to the increasing demand for energy from developing economies, like China, concern over energy security has started to take a different dimension. China is a fast-growing economy and the world's largest energy consumer and even though it is an oil producer, its oil production has stagnated and its dependence on oil imports has grown rapidly. Moreover, its state centric or neo-mercantilist approach with regards to its energy strategy and mainly oil, which is under close state control, including price controls and subsidies make the situation

even more fragile, creating global concern and insecurity, a situation which can be detected using four basic arguments. Firstly, energy reserves especially oil and gas reserves are not endless, therefore each state struggles in order to ensure that its future energy needs will be met. Second, China's above-mentioned state centric approach towards energy, does not facilitate the efficient distribution of energy, so despite the fact that there are no limitations for oil consumption, prices are being kept rather stable, thus oil demand never decreases. A third source of insecurity is China's preference to join bilateral, long-term oil supply agreements with oil-producing countries. But this strategy affects other oil importing countries as well, because China is willing to pay a lot in order to get the oil it needs and secondly, because this practice "locks up" (Taylor, 2014) oil supplies, which are automatically becoming unavailable for the rest of the oil-importing countries. Another interesting element of China's energy strategy that raises concern and also harms competitiveness, is the state's policy towards the Chinese National Oil Companies (NOCs), which enjoy high financial support, while serving China's energy interests through guidance on their effort for more overseas investments.

Table 3.1



Source: U.S. Energy Information Administration, International Energy Outlook 2013

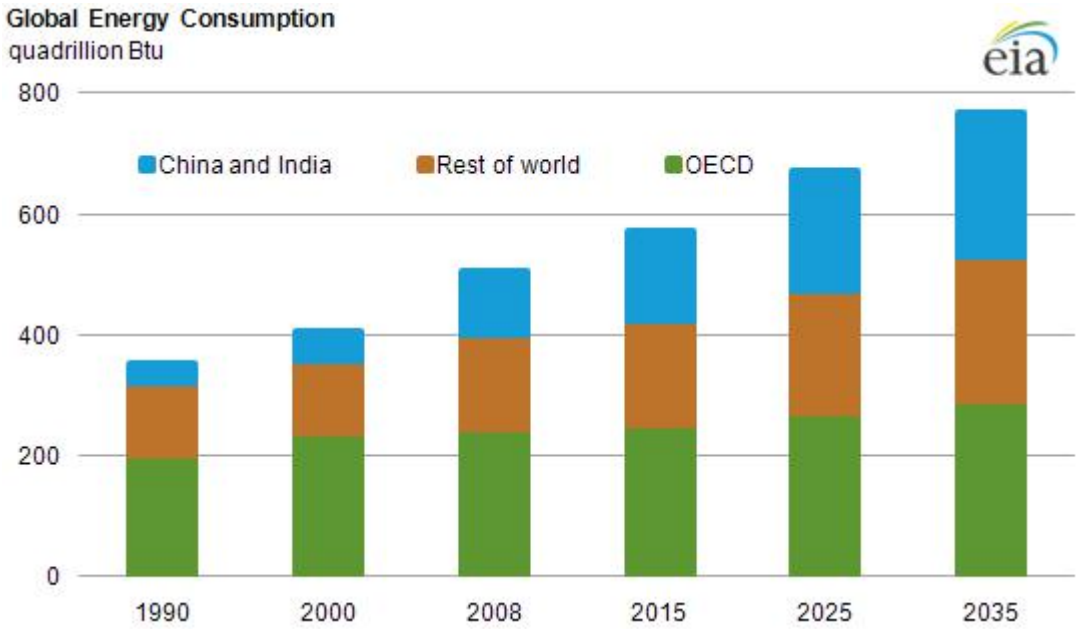


Table 3.2

Source: U.S. Energy Information Administration, International Energy Outlook 2011 (IEO2011)

When observing all these aspects around China's energy policy in conjunction with the projections about China's - and other fast developing countries (Table 1.1), like India (Table 1.2) - future energy demand, the rational reaction is concern, firstly about the difficulties that might occur for access to the available energy sources and

of course for the possible price fluctuations, or as Zhang J. (2011) puts it, the main question is "whether China's growth is economically, socially, and politically sustainable, and whether China's energy demand will crowd out other countries' energy needs and exhaust global energy resources". Another issue that initiates from China's energy policy, which shows a general tendency and therefore needs to be taken under consideration is that its state capitalist model calls into question the western liberal approach to energy policy and trade, it sets a precedent and creates the tendency for more developing countries to follow that direction. This tendency affects competition within the energy market and creates state-owned companies with massive power and wealth that can easily afford not to compete for energy supplies in the free market but act on will and "go global", meaning that as mentioned earlier these firms have the ability through investments to secure their access to foreign energy resources. In any case, primary objective for the Chinese government at this point is not its energy independence, since this goal would be also infeasible, but how to mitigate its dependence on oil and also find a sustainable plan in order to achieve energy security.

According to Daniel Yergin (Bahgat, 2011), the "fundamentals" in order to succeed energy security include: high level of diversification, high quality's and direct information, high levels of cooperation amongst the states that participate in the energy trade, relatively stable investment flows and further research and development of the energy related technology. He also supports that concern should be concentrated mainly on the effective protection of the available infrastructure as a means of protecting the stability of the entire energy supply chain, which according to Yergin also needs to be further globalized as well.

The International Energy Agency's (World Energy Outlook 2008) projections show that despite all the development on alternative energy sources, fossil fuels will represent the world's main energy source in 2030. Therefore, even though investments targeted towards the development of alternative energy sources should progress and intensify, the effort for reliable, sustainable, affordable and environmentally friendly acquisition and use of fossil fuels will remain.

3.1.6 Hydrocarbons

During the nineteenth century coal was the dominant fuel and it still holds a high spot in the global energy mix. However, coal's geopolitical significance is negligible as due to its weight, its transportation is very costly and unadvisable, so coal is and it appears that it will continue to be consumed within the national borders of each country that produces it. On the other hand, the significance of oil and gas when it comes to energy security is distinct, as they can provoke major geopolitical developments among nations from all around the world. The overall superiority of oil when compared to coal resulted in its dominance over the latter as the world's major fuel since the 1970's onwards. This superiority is demonstrated by its higher energy density, its flexibility as a fuel and cleaner character when compared to coal, as well as its easier storage and transportation ability. Further, petroleum's higher geopolitical significance can be detected from the fact that, each country's reserves data are considered state secrets, thus, it is not accepted for a foreign observer to go forward with any kind of exploration and verification of the related data demonstrated by the national state (Fanchi, 2005).

Oil, as well as gas, are both petroleum fluids, which is comprised of hydrocarbon molecules. Petroleum products can be found in the pore space of sedimentary rocks, but usually formed away by heat and pressure. Oil's distinction to heavy and light is due to its molecular weight and its gas concentration. Heavy oil, contains small amounts of gas and its molecular weight is large and the opposite applies respectively for light oil. In order to identify the development of a hydrocarbon reservoir, some specific factors need to exist (Fanchi, 2005). For starters there has to be a source for the hydrocarbon and good source rocks can be formed when organisms are subjected under high pressure and heat creating shales. Further, the existence of a "flow path" between the source and the reservoir rock is very important and after the hydrocarbon fluid has been transferred to a reservoir rock, the existence of a trapping mechanism is essential, so that the fluid does not move toward the surface. Therefore, the most vital factor in order for all these processes to happen, is timing.

The classification of crude oil (Bahgat, 2011) depends on its density and its concentration in sulfur. Light crude, meaning the low-density crude, has a high content of the final, the useful petroleum products, like gasoline and can become a marketable product through a simple refining process (distillation). Heavy crude oil

on the contrary, has a lower content of light hydrocarbons, therefore a much more complicated process than distillation is required in order to extract the same amount of usable petroleum products (coking and cracking). The refinery process takes place in order to extract sulfur from crude oil, as it is an undesirable element and heavy investments are required in order to do so. Depending on its sulfur content, crude oil is distinct to sour crude, when it has a high sulfur content and to sweet crude when its sulfur content is low. When compared, the most valuable one that is also considered as superior is the light/sweet crude, due to its higher consistency in valuable petroleum products and its lower requirements regarding its refining process. Another distinction for oil is that between conventional and non-conventional oil. The majority of the oil consumed by the world today belongs to the former category. It is available at large quantities, it is considered to be of high quality and it originates at previously discovered giant fields. The non-conventional oil requires enhanced recovery, whose purpose is the alteration of oil's characteristics, while in the reservoir, through steam injection or else. It is located at more hostile environments, in small quantities and it is considered to be of a low quality as well. It is not advisable to produce non-conventional oil, due to its cost as well as the environmental complications of the methods used for the extraction. Here, alternative resources have to be considered (Park, 2013).

In order to identify a hydrocarbon reservoir, firstly an exploration target is indicated, but it takes much more until the reservoir is qualified as economically exploitable and reach its final destination, the consumer. When the discovery of a reservoir is made, the next stage is the well drilling. Seismic surveys and delineation wells are being used in order to establish the reservoirs boundaries and its production life can begin immediately after the well is drilled and the first fluid is withdrawn. A well's performance is influenced by many variables, such as the properties of the reservoir rock and of the fluids' as well as the way they interact with each other. The surface facilities are also highly important during all stages, drilling, completion of the well and operating the well. The initial processing of the fluids can happen at the well, where the initial product is being separated into oil, water and gas, however further processing that separates it to marketable products (gasoline, diesel) takes place at the refineries. Finally, after the hydrocarbon fluids are produced, they must be recovered, processed and transported in order to be stored before reaching to the final

consumer. The transportation methods used for oil and gas vary from pipelines to tanker trucks, double hulled tankers as well as ships appropriate for liquefied natural gas transportation (Sorensen, 2004).

The targeted reservoirs are not always of the same importance, but are being distinct to either proven, probable or possible reserves. As proven reserves are being characterized those that geological and engineering data conclude with 90% certainty that their recovered actual quantities will exceed the estimated quantities and that can be exploited in the future under the current economic and operating circumstances. Respectively, the probable reserves are the unproven reserves that geological and engineering data with a 50% probability conclude that they can be commercially viable and possible reserves are the unproven reserves for which again geological and engineering data show there is a lower possibility (10%) than probable reserves to be commercially important. Regulations can either complicate or facilitate the matter (Park, 2013).

The advancement of the technology used for the exploration and extraction of oil is an ongoing process. Firstly, technological developments have enabled oil companies to reduce the cost of the overall process of finding and exploiting hydrocarbons. Furthermore, seismic surveys and more specifically digital seismic surveys, firstly introduced in the 1960's have very much assisted oil companies to decrease their failed drilling rates. Technology has also given to oil companies the opportunity to find and extract oil even from the deep ocean bottom, therefore produce largest quantities of hydrocarbons through the use of offshore fields. Due to that kind of technological advances, what was once characterized as non-conventional oil, it is now considered as conventional. Even so, however, that also means that hydrocarbon reserves are slowly but gradually depleting and the price of this commodity will start to rise in the future. Nations must be ready to adapt and adjust their ways accordingly (Park, 2013).

3.1.7 Energy and Economy

To energy economics, it is recognized that energy cannot be created or destroyed, but it can be converted into various forms, that it originates from the environment and that is where it ends up. Therefore, based on this ascertainment,

energy economics is the study of any human activity that relates to the usage and conversion of energy resources, through complex processes, in order to create forms that provide energy services. Energy is vital for the overall economic progress of a state, due to its essential role in the production process and due to its highly trading capacity. Energy demand generates from the human desire to obtain goods and services, thus energy is not a commodity itself and it involves investment, operating costs and even fuel costs, if there are any (Lubbe, 2003).

Energy is what provides to the community the possibility to increase, optimize and even secure its production, which links the former to the economy, by enabling the existence of many services, such as transportation, the dissemination of information, heating and so forth. The demand for energy services is being highly influenced by the economic growth and development and reflects the economic income. Increased production equals more energy and respectively greater disposable income equals more demand for services. In any case, the impact of the economic activity on energy demand as well as the significance of energy on the economic production and growth is indisputable. Also, the way a state organizes its energy policy and the methods of energy production and consumption it follows is an indication of how it acts in the international system and of its overall political agenda. Notably, liberal states in the West, tend to prefer "green energy politics" and non-liberal ones (such as China) opt for profit at all cost (Park, 2013).

Energy demand is also affected by the rising trend of the world's population, technology and the overall state of the economy as well. Currently, the world is experiencing an era of dramatic change and growth, "the great acceleration", when more and more countries, mostly developing countries are trying to achieve industrialization and higher levels of socioeconomic development, consequently their internal demand for energy-intensive goods and services grows accordingly. The international energy law and organizations that take over the task of regulating energy policies and the market have a key role to play. After all, as essential as energy is for an economy in order to progress and thrive, likewise a healthy economy is quintessential in order to ensure that energy demand is being effectively covered, that investments are being made towards technological progress and research, as well as for the construction and improvement of the necessary infrastructure, that enables a country to achieve the aforementioned goal (Glavinis, 2009).

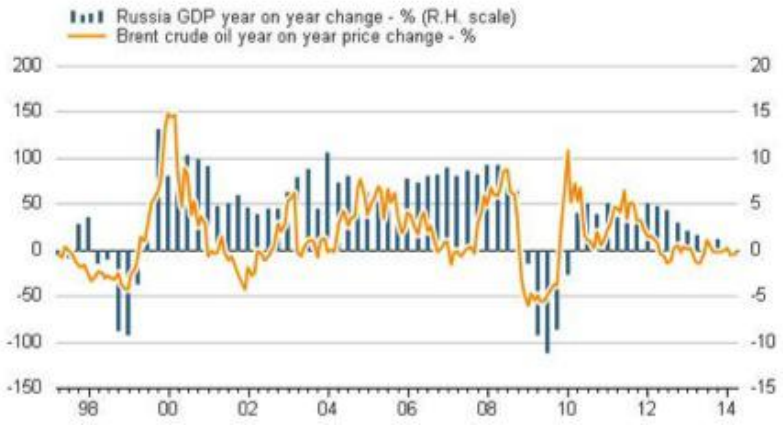
A very distinct role when it comes to production and consumption is that of the energy price. Any alterations in energy prices can cause major changes to the energy demand itself, but also to the whole supply and demand chain of goods and services that adjust accordingly. Prices send messages to the market, both consumers and producers. For instance, higher prices might mean scarcity, which leads the buyer to move toward different direction, by buying less of that product or look for an alternative choice, while invigorating the additional supplies and augments sales for the producer. Prices have also catalytic influence on income and profit. For the consumer, price reflects the affordability, where the price times the quantity purchased results in the disposable income. For the producer, price times the quantity sold, minus the cost and taxes, shows the total revenue. However, with energy the reality is that the producer-seller do not have such distinct roles but, on the contrary, the market is neither absolutely free or open to every interested party. Energy can make or break a business and it can even lead to political and other competitions between states. The Middle East and Caucasus are clear examples of how and why such instances occur (Dannreuther, 2010).

Many studies indicate that the demand for energy is price-elastic, which means that as the energy price increases energy use tends to decline. In fact, when energy price increases the market reacts and the use of all forms of energy decreases. According to these findings, a potentially steadily high energy price could lead to a steadily low, more efficient and sustainable use of energy. The overall effects of the energy price on the entire economy, can be very well understood when examining the results of the fluctuations of the price of oil. As already mentioned, oil is the largest traded commodity, it is considered necessary for the smooth operation of the community and it is literally fueling the entire world economy. Its importance is undoubtable either if it concerns the producing or the consuming states, while price fluctuations can affect everyone depending on each one's perspective. The price of oil is not only influencing the overall world economy but it is also very vulnerable to political and technological changes and developments, making fluctuations a very common phenomenon (Goldwyn, Kalicki, 2013).

With respect to the oil-consuming countries lower oil price is to their benefit, since oil contributes significantly to a country's production ability. However, a falling trend to oil prices can affect very negatively the oil-producing states, since a high

proportion of their revenues comes from oil exports it could easily throw off their entire budget. As shown in Table 1.3, an oil-producing state's GDP, in this case Russia, is very closely related to oil price and moves in relative analogy to the latter.

Table 3.3



Source: Le Coq C., Trkulja Z, SITE, 2015

Fluctuations of oil prices have a great impact to the whole oil-related industry, such as local retailers, the overall cost of production in all industries, the country's available income, exchange rates, trade balance and the overall uncertainty as well. For instance, an oil-price drop can intrigue large exchange rate devaluations that cause "imports substitution and exports expansion for oil-exporting countries" (Coq, Trkulja, SITE 2015).

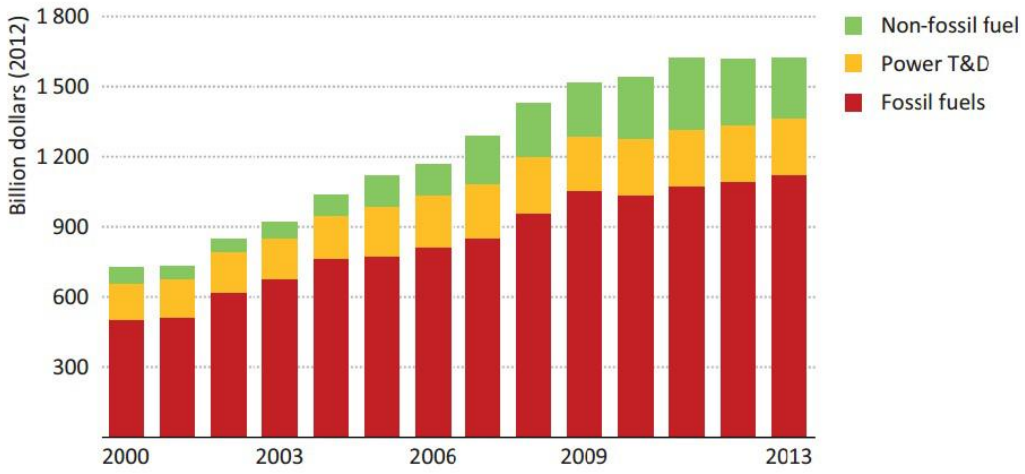
This cycle continues with further implications that can affect the entire economy, implications on both imports and exports, the current accounts and countries' comparative advantage, the global value chains and can even induce structural alterations on employment. The effects are visible throughout the entire world economy. For instance, a likely fall in oil-price does not have direct consequences only on the oil-exporting countries, but on all countries, that are related to the former either through trade or investments.

According to Luca De Lorenzo, there is another major effect that oil-price fluctuations can induce. De Lorenzo suggests that when the oil price is moving at low levels, that is the best moment to shift towards cleaner energy sources and energy markets' modification, something that could ultimately lead to the avoidance of unusual price changes to other products as well. The way he suggests to promote this

transition, is firstly the abolition of subsidies that distort markets and secondly, the adoption of a short-term measure, the introduction of a price for carbon.

Another fundamental point regarding the price of oil is the overall uncertainty that it creates, due to the difficulty to predict its variability. Therefore, oil-price creates political pressure as well and it poses another challenge to the overall decision-making process of states.

Table 3.4 Investment in global energy supply by fossil fuel, non-fossil fuel and power T&D



Notes: Non-fossil fuel includes all renewable technologies, nuclear and biofuels. Power T&D is transmission and distribution for the power sector: this cannot be assigned to either fossil-fuel or non-fossil fuel use.

Source: International Energy Agency, 2014 [Online]

Energy requires high volumes of investments, in research, technology and innovation as well as infrastructure. From extraction, to processing, transportation, storage, distribution and end-use infrastructures, investments are a necessity and in fact, according to the IEA, almost 70% of energy supply investment in 2013 was connected to fossil fuels, including extraction, processing, infrastructure and transportation (see also Table 1.4). Investments related either to infrastructure or technology are both essential, the former supports the entire energy chain and the growth of the energy system, as well as its short-term stability and the latter enables the evolution of the energy system, progress especially in terms of the environmental protection, therefore it facilitates the system in the longer-term. When it comes to

fossil fuels specifically, the need for more investments is characteristic. The reason is that fossil fuels, in this case oil and gas, are not infinite sources, they decline and eventually they will be depleted, creating a need for more investments especially on research and technology, so that the exploration and the development of more fields can become possible.

Investments are mainly being affected by political and economic factors. For instance, when prices are low, the total revenue of the producers' declines, therefore the available capital left for investments is lower as well. Another essential issue for the materialization of an investment in energy is the environment. Companies in order to invest, are looking for a welcoming, stable environment, which basically means open market and a government willing to cooperate with the concerned company, even that is a private or a foreign one. The "environment" in energy politics and economics of the energy market can either refer, as a term, to the natural, the social, political or economic one (Park, 2013). A very characteristic example is a practice adopted by Kuwait as well as Iran with regards to oil, which concerns the imposition of restrictions to any foreign participant when it comes to cheap reserves, thus pushing investments towards the exploration and development of new and high-cost reserves.

Another important factor in order for a company to proceed with an investment, is the result of the economic viability analysis. The economic viability of an investment depends on many different factors, tangible factors, which are generally easy to quantify, such as infrastructure or drilling a well, and intangible factor which are much more difficult to quantify, since they concern issues like environmental, social complications and so forth, nevertheless they deeply affect the viability of the investment. In order to achieve the best possible decision, companies should draft the Life-Cycle Analysis that among others it also delivers to all those concerned the overall costs of an energy system, including environmental, economic, social, security, political, resilience and development costs (Sorensen, 2004), by taking into consideration all of the life-cycle costs of each investment option, which include the initial capital expenditures as well as the overall annual cost of operation for the entire expected life of the system.

The life-cycle costs can be both direct and indirect (Sorensen, 2004) and they should be carefully studied and along with an evaluation of the sensitivity of cash

flow predictions within reasonable changes in cost as a function of time (Fanchi, 2005), an optimum decision can become achievable. For an energy system in particular, the life-cycle costs include the capital equipment costs, acquisitions costs, operating costs, interest charges in case of a loan, maintenance and insurance costs, taxes, other recurring or one-time costs related to the system as well as salvage or abandonment cost (Goswami, 2015).

Through this analysis, it is highly important to be able to predict with the best possible accuracy changes that might occur that would affect the viability of the investment. For example, the estimation of the decline of a reserve is important, simply because as the reserve declines the cost increases, therefore the pace and the timeframe that this development will take place is vital. Through a life-cycle analysis one can accurately estimate the end-use efficiency, which is the overall efficiency of the conversion of primary energy to a useful, marketable form of energy (Fanchi, 2005).

The effort to evaluate with as much accuracy as possible the intangible factors of an investment and the uncertainty that is surrounding this process, creates the need to estimate the risks that result from the decision to invest under uncertainty, the so-called Risk-Analysis, where risk represents the possibility of an unexpected event to affect negatively the investment and uncertainty refers to the limited knowledge of the future that we have, within which one is obliged to make a decision without 100% accuracy of its outcome and implications. Risk analysis includes one very distinct disadvantage, as all the decision making has to be based on present expectations with regards to future developments. In order to limit the implications of that disadvantage companies use the Real Option Analysis, which "attempts to incorporate flexibility in the management of investment options that are subject to considerable future uncertainty" (Fanchi, 2005). The real option analysis collects a set of options associated with a project and evaluates each option's possible outcomes, therefore allows us to understand how much each different element, future events and so forth can affect the value of a project.

3.1.8 Energy and International Law

Initially, through concession agreements, multinational oil companies were granted the full and exclusive right to explore and develop any oil fields discovered within the area determined by the agreement. Therefore, the producing state had no rights over the field and no gains until 1958, when a resolution related to the rights of the producing states passed by the Organization of Petroleum Exporting Countries (OPEC). The resolution fortified the producing state's right to re-negotiate the agreement on "the basis of inequity" (Park, 2013). The OPEC resolution was followed by the 1962 UN resolution the "Permanent Sovereignty over Natural Resources" and the 1973 Riyadh Agreement which further extended the producing state's rights with the right to participate in the production of the oil. The next step was made in 1974, when the United Nations adopted the Charter of Economic Rights and Duties of States (CERDS) within the Special Session of the General Assembly on Raw Materials, that gave the complete and permanent sovereignty of states' over their natural resources and any economic activity related to the former, stating that "in order to safeguard these natural resources, each State is entitled to exercise effective control over them and their exploitation with means suitable to its nationals, this right being an expression of the full permanent sovereignty of the State".

The international law grants jurisdiction to the state, as far as hydrocarbon resources are concerned, even if they are located in its soil, subsoil, its internal waters and territorial sea, its continental shelf and its exclusive economic zone. Despite having complete rights on their national hydrocarbon resources, not all states have the ability, either this is financial or technical knowledge to explore and exploit these resources. For that reason, the delegation of these operations by the state to an International Oil Company (IOC), has become common practice. The relationship between the state and the IOC can be regulated either by international law or by domestic legal acts and that need has led to the creation of different conventional formations, with the most important ones being the licence, the concession agreements, the production sharing contracts and the service contracts.

IOC's undertake huge risks when committing to such an investment, mainly due to high volumes of capital needed for ventures of this kind, but also due to the high level of uncertainty revolving around this kind of investments, as we already examined. Nevertheless, there are many different ways of defining the company's relationship with the state, the ownership, the act of granting the rights and they vary

depending on the state. Generally, states seem more eager to undertake the risks associated with the exploration of a field when the insecurity level is particularly low and in some cases, they even try to change the agreed with the IOC regime, if the risk and the insecurity surrounding a field lessens, in fact it is their right to do so, due to their sovereignty, which gives them the right even to alienate blocks or entire fields in retrospect (ex post facto) or reduce the profits of the company for their own benefit.

A primary objective of the license regime is to provide incentives to both parties (the state and the IOC), but here the priority is the IOC, since the venture has to be very beneficiary for the latter in case discoveries are to be made, otherwise no company would be willing to undertake such huge risk in order to explore an unknown field. The regime covering the agreement determines whether the investment will prove to be economically successful or not, by determining the fiscal terms, which include the level of royalties, the taxes and the distribution of the profits. In the case of the license regime, which can be described as a lease, the produced hydrocarbons are owned by the company. However, any discovered hydrocarbons, if situated within the state's territory are owned by the state and after the discovery the state can proceed and grant the licence to the IOC. The company is being granted the right to explore and exploit a particular spot in exchange for a fee or a royalty, meaning that the company can economically exploit its findings, which will be taxed by the state. Major states select this kind of regime to cover their hydrocarbon discoveries, such as Canada, the United Kingdom, Russia and Norway (Kosmidis, 2014).

The same with what happens concerning the license regime goes for the concession regime as well, meaning the ownership of the hydrocarbons produced belongs to the company "at the well-head" (Kosmidis, 2014). The concession agreements that for many decades were the primary model for the exploration and exploitation of hydrocarbon reserves, belong to the royalty/tax system. These agreements are compiled between the state or its agent and the IOC, which is being granted with an exclusive right to explore, produce, exploit, transport and trade the extracted hydrocarbons for an exchange of royalties, kind or cash benefits and usually it is also being obligated to pay taxes and even additional charges, like a production bonus or a surface fee. The agreement concerns a specific area and lasts for a specific time period, determined by the former. The IOC is responsible for the complete

funding of the project and bears the entire risk of the investment. In states where the extracted hydrocarbons can be private property (e.g. USA), rights on the hydrocarbons can also be granted before the extraction, thus rights over the reserve.

Under the production sharing contracts the state retains ownership of the extracted hydrocarbons and a portion passes to the company, which also represents its payment for overtaking the project and any risks involved (contractual system) (Kosmidis, 2014). Therefore, in this case the company does not hold the entire risk but a part of the commercialization risk of the discovery is owned by the state. The company receives the exclusive right to explore and exploit a specified area for a specific time period, both determined by the agreement. The distribution of the profits is made according to the "production sharing". Usually, the contractor is obliged to pay taxes or additional amounts as with the concession regime. During the last years, the production sharing agreements are gaining more ground, superseding the concession agreements, due to their flexibility and adaptability and due to the fact that they can ensure the national interest more efficiently (Kosmidis, 2014).

For the service contracts applies the same as with the production sharing agreements, meaning the state retains the ownership of a portion of the reserve and of its commercialization risk and a portion is passed to the IOC. However, in the case of a service contract, the company's payment might not be the allocation of a part of the produced hydrocarbons, but it can be a financial reward. They are distinguished to pure service contracts and risk service contracts, depending on whether the contractor's payment is a flat fee or based on the profit of the project (Kosmidis, 2014). There are many variations of service contracts that can be a combination of the above elements. Generally, this type of agreements are not preferred, mainly due to the unwillingness of the state to take such a risk but also pay the company in cash. With regard to the offshore "artificial islands, installations and structures", the 1982 Convention (UNCLOS) does not provide an actual definition, however, it provides certain regulations over the rights of the state over these installations, in each maritime zone separately.

A state owns the right to construct an installation of this kind in 1. its internal waters, meaning 'waters on the landward side of the baseline of the territorial sea" (Article 8 UNCLOS 1982), where the state has complete sovereignty and jurisdiction, therefore the construction of an offshore installation depends on the state's domestic

law and regulation, 2. its territorial sea “the sovereignty of a coastal state extends, beyond its land territory and internal waters and, in the case of an archipelagic state, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea” (Article 2) and this sovereignty includes the air space as well as its bed and subsoil. Further, the coastal state has the right to construct offshore installations in 3. its exclusive economic zone “an area beyond and adjacent to the territorial sea” (Article 55), which is a claimable zone that “shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured” (Article 57), where the coastal state has exclusive rights with regards to the construction and regulation of the constructed installations as well as an exclusive jurisdiction (Article 60), 4. its continental shelf defined as the area that “comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance” (Article 76), where the state enjoys sovereign rights for the exploration and exploitation of the non-living natural resources, exclusive jurisdiction and the exclusive right to “authorize and regulate drilling for all purposes” (Article 81), a zone that the coastal state does not need to claim, but delimitate with other states in case of opposite or adjacent coasts. Only five (5) States have the right to the construction of offshore installations in the high-seas, which applies to “all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State” (Article 86), where according to Article 87, all states either coastal or land-locked, enjoy the “freedom to construct artificial islands and other installations”, “with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the area”. Finally, the Convention provides to all states the right to installations for all activities of exploration (Article 1, 1.3) at the International Deep Seabed Area, which “shall be erected, emplaced and removed solely in accordance with Part XI and subject to the rules, regulations and procedures of the Authority” (Article 147).

After the authorization of an offshore installation, there is the matter of jurisdiction over the oil and gas rigs that needs to be handled. The coastal state has the

exclusive jurisdiction when the installation is within its internal waters and its territorial waters, however it has no jurisdiction when the installation is on high seas. With regards to installations located within the state's continental shelf and EEZ, there is a relative ambiguity, however, according to Article 60 (2) "the coastal State shall have exclusive jurisdiction over such artificial islands, installations and structures, including jurisdiction with regard to customs, fiscal, health, safety and immigration laws and regulations".

The 1982 Agreement also provides that states have the obligation to protect and preserve the marine environment, whilst the coastal states are obligated to adopt laws and regulations for the prevention, decrease and control of the pollution of the marine environment caused by activities that take place to their seabed and fall under their jurisdiction as well as by artificial islands, installations and structures. Further, states shall harmonize their policies at a regional level, especially when they act through competent international organizations or diplomatic conferences, states enact international and regional template rules and recommended practices and procedures towards the aforementioned goal. States are not only responsible for applying those rules, but to undertake the necessary measures for their application as well (Athanasopoulou, 2014).

3.1.9 Conclusion

In this chapter the research approached important terms of IR that more or less define states' behavior within the international system. Main goal of this part was to demonstrate the importance of each of those terms especially in relation to energy resources and their exploitation. Energy proves to be a critical aspect when it comes to geopolitics, states' interaction, national interest and goals, as well as power. Further, as examined above, energy is very closely linked to globalization, thus it further emphasizes the interdependency aspect amongst the international players and can highly affect their foreign policy decision making process. Also, the analysis of states' energy security could not have not been excluded, as within the current international system it strongly affects every state's foreign policy agenda, the balance of power and the overall system as a whole.

By using a subtractive method in order to select the theoretical framework that would best accompany this analysis, modified structural realism prevailed, eliminating both realism and neorealism, as well as liberalism, Marxism and social constructivism. Modified structural realism is the theory that best combines all aspects that contribute to one state's behavior towards the rest and that determine its foreign policy decisions, aspects that also determine energy policy, since energy is currently a high priority in every states foreign policy agenda.

In continuation, a further analysis of the importance of energy in the 21st century takes place with main purpose the indication of the challenges that the world is currently facing and which originate by energy and more specifically by fossil fuels. Once again, insecurity plays a distinctive role, from the finite element which characterizes oil and gas, to the increasing trends of demand as well the environmental challenges that they bring to the table. When approaching and analyzing the challenges the world is currently facing due to its energy choices, the role of the developing countries stands out, as their part to the deterioration of the situation is unquestionable and China exemplifies this argument. Based on projections that indicate that fossil fuels will remain the primary energy source for many years to come, a closer examination of fossil fuels and their characteristics seemed necessary in order to understand better the field. Therefore, the paper will also briefly present the main characteristics of petroleum and the conditions under which the creation of a reserve can become possible. Another important element in relation to that matter is the identification of the field, its classification and whether it can become an exploitable field and an economically viable investment.

Energy is a primary commodity and a highly marketable product. Energy's relation with Economy is intertwined and interdependent, as energy is essential for the economy, but a healthy economy is equally important in order to ensure that energy needs are being met and investments are being made for the progress of the field, with ultimate goal high levels of security and stability. Energy has the power to support an entire economy but also blow a state's budget at the same time. Price is essential to the overall outcome, so the researcher used the oil-price fluctuations in order to show the variety of outcomes that any alterations in energy prices can provoke (Kosmidis, 2014).

Due to the immense volumes of investments that the energy field requires, it is important to investigate the destination of those investments as well as the elements that need to coexist in order for an investment to prove healthy and viable. Investments are being affected by both political and economic factors and when it comes to hydrocarbons, due to the insecurity and the high risk a company should undertake in order to explore for and produce, a series of analysis has to take place beforehand. Nevertheless, no state, no matter how powerful is fully independent or free to form its own policy around energy (Nye, 2012).

The next part includes a brief overview of the international law covering the oil and gas rigs as well as the regime under which a state shall function in order to cooperate with an oil company and allow access to and profit from a field under its sovereignty, as it fortifies the rights and obligations of both sides and mainly because ultimately it determines whether the investment will prove to be cost effective or not. Finally, the last part is dedicated to the offshore oil and gas rigs and the 1982 UNCLOS provisions in respect of the coastal state's rights and obligations surrounding these installations, including its obligation towards the protection of the marine environment and the avoidance of its pollution. Therefore, states own the right to construct such installations to their internal waters, their territorial sea, their EEZ and continental shelf, as well as in the high seas and at the international deep seabed area, which all fall under different sets of rules and regulations.

3.2 European Union

Summary

The second part of chapter three is dedicated to the European Union, as energy has always been a vital concern for its member states and it was literally the triggering point for the creation of the Union as the European Community of Steal and Coal, the predecessor of the EU, funded in 1951 (ECSC 1951). Energy still remains a basic concern for the member-states, a fact that relates mainly to its high needs and the lack of indigenous resources within the Union. Further on, the paper will examine the vulnerabilities of the EU and the one that stands out would be its overdependence on external energy supplies, and then its core energy targets that, as shown, stem mainly from its vulnerabilities, consequently the most important target would be the lowering of its dependence. A more extensive analysis of EU's dependence on Russia follows, because Russia is, and it seems that will continue to be, the most important energy partner of the Union, since its reserves are abundant and its competitiveness level very high, but also the cause of uncertainty and insecurity. Therefore, whether or not Russia will continue to be an important energy partner of the Union, the EU should no matter what, continue its diversification process and search for better alternative options that will provide the possibility to limit somehow its dependence on Russia to a more controlled extend, so for the next part there will be given a list of the current and future alternative options, which the Union can turn to, if necessary, where options such as Azerbaijan, North Africa and Iran seem to be the most promising along with the LNG option and the Eastern Mediterranean Corridor, whose importance and meaning stand out, so it is examined in more depth than the rest in a separate part. After measuring the alternative options of the Union and taking a look at its current infrastructure, the conclusion is that the most beneficial strategy for the member-states at this point would be to pursue further connection to more suppliers other than Russia through the construction of the necessary infrastructure, that will not only give them the option of more suppliers but will also motivate Russia to make investments and also trigger the competition.

3.2.1 EU's Energy Targets and vulnerabilities

The oil and gas reserves are very unequally distributed, as a result many regions around the world have abundant reserves, while others have none. A review conducted by BP in 2007, estimated that only 0.6% of the world's proven oil reserves and 1.3% of the world's proven natural gas reserves were located in the EU. The limited amounts of the Union's own oil and gas reserves subsequently lead the EU to rely on imports in order to meet its energy needs, therefore energy has always been a core issue for the European Union. Since the creation of the European Coal and Steel Community energy has been a priority (ECSC 1951) and still remains as such. The basic targets (Green Paper, COM 2006) set by the EU for the next years with respect to energy are security of energy of supply, sustainability, competitiveness and taking substantial action towards tackling climate change.

Despite the slight decrease of energy consumption during the last decade mainly due to the economic crisis, the energy import dependency of the Union is rising with 53.5% (Eurostat 2016) of the Union's energy needs being met by imported products. The overall primary production of the EU in 2014 was 17.3% lower than a decade earlier (2004). Further, during this last decade (2004-2014), with an exception in 2010, when production rebounded, the Union's primary energy production shows decline. It is significant that, in absolute terms, an expansion of the primary energy is observed in many of the member states (see Table 2.1) in a range of energy sources, however it is mainly limited to nuclear power and the renewable energy sources, while the overall rate of primary energy production is decreased.

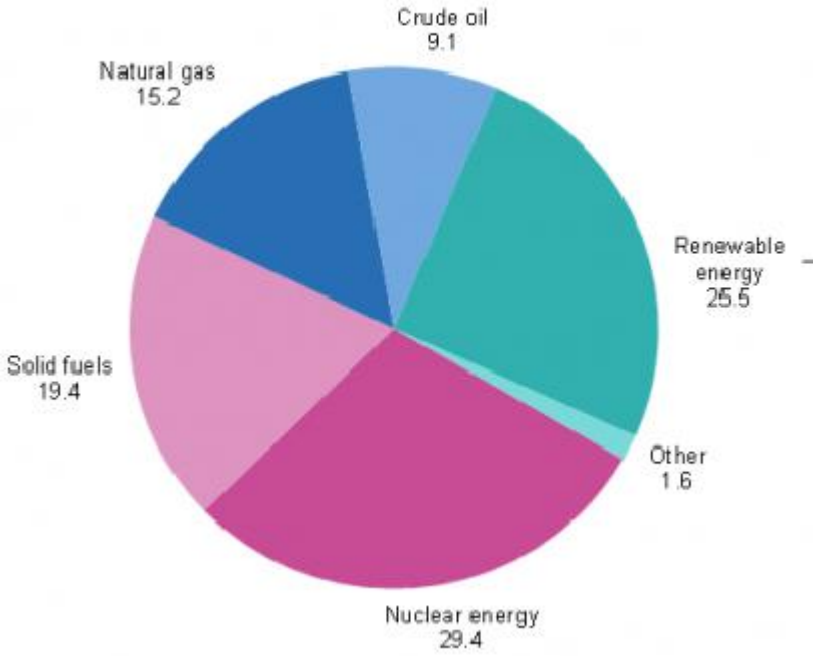
Table 4.1 EU's Energy Production 2004-2014 (million tons of oil equivalent)

	Total production of primary energy		Share of total production, 2014 (%)				
	2004	2014	Nuclear energy	Solid fuels	Natural gas	Crude oil	Renewable energy
EU-28	931.7	770.7	29.3	19.4	15.2	9.1	25.4
Belgium	13.5	12.2	71.2	0.0	0.0	0.0	23.4
Bulgaria	10.2	11.3	36.5	45.3	1.4	0.2	16.4
Czech Republic	33.1	29.1	27.0	58.0	0.7	0.9	12.6
Denmark	30.9	15.8	0.0	0.0	26.3	51.2	19.9
Germany	136.8	119.9	20.9	36.8	5.7	2.9	30.0
Estonia	3.7	5.8	0.0	78.5	0.0	0.0	20.3
Ireland	1.9	2.0	0.0	48.3	6.1	0.0	42.5
Greece	10.3	8.8	0.0	72.5	0.1	0.7	26.5
Spain	32.4	34.9	42.3	4.7	0.1	0.9	51.5
France	135.4	135.9	82.8	0.0	0.0	0.8	15.5
Croatia	4.7	4.4	0.0	0.0	33.2	13.9	52.7
Italy	29.2	36.8	0.0	0.1	15.9	16.6	64.2
Cyprus	0.1	0.1	0.0	0.0	0	0.0	94.2
Latvia	1.8	2.4	0.0	0.1	0.0	0.0	99.6
Lithuania	5.1	1.5	0.0	1.9	0.0	5.6	91.3
Luxembourg	0.1	0.2	0.0	0.0	0.0	0.0	78.8
Hungary	10.2	10.0	40.3	15.8	14.3	8.2	20.4
Malta	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Netherlands	68.2	58.4	1.8	0.0	85.8	3.4	7.8
Austria	9.9	12.1	0.0	0.0	9.0	7.6	77.6
Poland	78.1	66.9	0.0	80.2	5.6	1.4	12.0
Portugal	3.9	6.0	0.0	0.0	0.0	0.0	97.6
Romania	28.6	26.6	11.3	16.7	33.0	15.8	22.9
Slovenia	3.4	3.7	44.6	22.2	0.1	0.0	32.0
Slovakia	6.2	6.3	64.1	9.2	1.3	0.2	22.8
Finland	15.7	18.1	33.7	8.9	0.0	0.4	55.8
Sweden	33.8	34.1	49.0	0.4	0.0	0.0	48.8
United Kingdom	224.3	107.6	15.3	6.3	30.6	38.1	9.0
Iceland	2.3	5.2	0.0	0.0	0.0	0.0	100.0
Norway	228.8	196.3	0.0	0.6	48.4	44.3	6.6
Montenegro	0.0	0.7	0.0	52.6	0.0	0.0	47.5
FYR of Macedonia	1.6	1.3	0.0	78.0	0.0	0.0	22.0
Albania	1.1	1.9	0.0	0.0	1.3	65.6	33.1
Serbia	12.0	9.4	0.0	60.8	4.7	12.4	22.0
Turkey	24.1	31.2	0.0	52.0	1.3	8.1	38.5
Bosnia and Herzegovina	3.6	6.0	0.0	62.3	0.0	0.0	37.7
Kosovo (under UNSCR 1244/99)	1.3	1.6	0.0	83.6	0.0	0.0	16.4

Source: Eurostat: online data code: nrg_100a

More specifically the highest production rates concern the renewable energy sources, which constitute 25.5% of the total energy production, nuclear power, which represents 29.4% and then solid fuels with 19.4%, while natural gas accounts only for 15.2% and crude oil only for 9.1% (see figure 2.1). One very distinct example of the current situation of the Union is the indigenous gas production of 2013, 70% of which came from only two countries, namely Norway and the Netherlands, with 109 bcm and 86 bcm respectively. Twenty more European countries produced gas during the same year, however, with an exception of Denmark, who exported small quantities, the rest of the produced gas was domestically consumed (OIES 2014).

Figure 4.1 Production of primary energy, EU-28 2014 (% of total, based on tons of oil equivalent)



Source: Eurostat: Online data codes: nrg_100a and nrg_107a

These extremely low production rates, especially with regards to natural gas and oil, have brought the EU to the position that it is today, where it is considered to be one of the biggest energy importers and very much reliant on imports in order to meet demand. After the economic crisis this situation has more or less been stabilized, with imports accounting for some 881 Mtoe more than exports (Eurostat 2016), where the largest net importers represent the members with the largest population.

Russia, despite its slightly reduced share, remains the primary oil and gas supplier of the Union. A small decline was observed in Russia's share of natural gas and oil imports, accounting for 37.5% and 30.4% respectively, which is being compensated by the significant increase of solid fuels' imports, but even so Russia remains the primary origin of EU's energy imports. Norway also maintains its place as the second main energy supplier (13.1%). An interesting observation is that compared to the previous years, when the rating distance between the dominant supplier of crude oil (Russia) and the second main supplier, namely Norway (Eurostat 2016), who in 2012 accounted for 33.7% and 11.2% respectively, has significantly

dropped by 5.2% in 2014 (Russia: 30.4% and Norway: 13.1%, see Table 2.1). Other major natural gas suppliers are Algeria, Qatar and Libya, which replaced Nigeria and respectively for crude oil, Nigeria, Saudi Arabia and Kazakhstan, with the most remarkable change since 2004 being Saudi Arabia's replacement by Nigeria.

Table 4.2 Main origin of primary energy imports, EU-28, 2004–14 (% of extra EU-28 imports)

						Solid fuels					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Russia	18.0	23.7	24.9	24.7	26.1	30.0	26.9	26.2	25.7	29.0	29.0
Colombia	12.0	11.7	11.3	12.7	12.3	17.4	19.9	23.5	24.2	22.0	21.2
United States	7.2	7.6	7.8	9.1	14.0	13.5	16.8	17.8	22.9	21.8	20.5
South Africa	25.2	25.0	23.1	20.1	16.5	15.8	9.6	7.7	6.3	6.7	9.9
Australia	14.5	13.1	12.0	13.0	11.7	7.5	10.5	8.7	7.2	7.4	6.2
Indonesia	6.6	7.2	9.3	7.8	7.3	7.0	5.5	5.0	4.5	3.1	3.4
Canada	2.4	3.2	2.8	3.0	2.6	1.4	2.0	2.2	1.6	1.8	2.5
Ukraine	2.3	2.2	1.6	1.8	2.3	1.7	1.9	2.3	1.6	1.5	1.5
Norway	0.6	0.5	0.3	0.5	0.6	0.8	0.8	0.6	0.3	0.6	0.7
Others	11.3	5.9	7.0	7.3	6.7	5.0	6.1	6.1	5.8	6.1	5.1
						Crude oil					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Russia	32.5	32.9	33.8	33.7	31.8	33.6	34.7	34.8	33.7	33.7	30.4
Norway	18.7	16.8	15.4	15.0	15.0	15.1	13.7	12.5	11.2	11.8	13.1
Nigeria	2.6	3.2	3.6	2.7	4.0	4.5	4.1	6.1	8.2	8.1	9.1
Saudi Arabia	11.3	10.5	9.0	7.2	6.8	5.7	5.9	8.0	8.8	8.7	8.9
Kazakhstan	3.3	4.4	4.6	4.6	4.8	5.3	5.5	5.7	5.1	5.7	6.4
Iraq	2.2	2.1	2.9	3.4	3.3	3.8	3.2	3.6	4.1	3.6	4.6
Azerbaijan	0.9	1.3	2.2	3.0	3.2	4.0	4.4	4.9	3.9	4.8	4.4
Algeria	3.3	3.5	2.5	1.9	2.5	1.6	1.2	2.6	2.9	3.9	4.2
Angola	0.6	1.2	0.7	2.0	2.6	2.7	1.6	2.1	2.0	2.9	3.3
Others	24.5	24.0	25.2	26.6	26.0	23.8	25.6	19.8	20.1	16.7	15.5
						Natural gas					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Russia	43.6	40.7	39.3	38.7	37.6	33.1	32.1	34.9	34.9	41.2	37.5
Norway	24.3	23.8	25.9	28.1	28.4	29.4	27.5	27.3	31.2	30.0	31.6
Algeria	17.9	17.6	16.3	15.3	14.7	14.3	14.0	13.2	13.6	12.8	12.3
Qatar	1.4	1.5	1.8	2.2	2.3	5.5	9.7	11.8	8.5	6.6	6.9
Libya	0.4	1.6	2.5	3.0	2.9	2.9	2.7	0.7	1.9	1.7	2.1
Nigeria	3.6	3.4	4.3	4.6	4.0	2.4	4.1	4.4	3.6	1.8	1.5
Trinidad and Tobago	0.0	0.2	1.2	0.8	1.7	2.3	1.5	1.1	0.9	0.7	0.9
Peru	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.4
Turkey	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Others	8.7	11.0	8.8	7.3	8.2	9.9	8.2	6.3	4.5	4.5	6.5

Source: Eurostat: online data codes: nrg_122a, nrg_123a and nrg_124a

The aforementioned data show that the EU's dependence on energy net imports remains high and that they mainly originate from counties outside the EU, a fact that further escalates the situation. When configuring the energy security of a region, energy dependence, as well as imports diversification are important indicators and the Union seems to fail in dealing with both.

The security of supply of the European Union is indeed threatened by multiple factors, with the lack of adequate investments targeted to boost the energy field of the Union being one of them. Projections show that the EU's investments' needs will be in the range of 1 trillion euros over the next 20 years (Green Paper COM 2006), in order to be able to fulfil its energy demand and also replace outdated infrastructures. The aforementioned high energy dependence of the Union, mainly due to the lack of competitiveness within the domestic energy market and of course its dependence on

high-risk regions (with high level of insecurity), deteriorate its insecurity even further and lower its chances of decreasing energy imports in the near future.

As mentioned earlier the overall rise of the global energy demand builds up concern among all developed countries, including the EU and in combination with the projections over the increasing trends of the global CO2 emissions, constitute another major insecurity source. In addition, energy prices on both oil and gas keep rising, in the EU specifically energy prices were almost doubled within a few years and considering the aforementioned increase of the global energy demand the chance of prices taking a downward trend lessens.

Another major energy supply security threat is undoubtedly Russia and when taking into account its recent conflict with Ukraine the situation does not seem to change in the near future. The crisis between the two countries has brought the Union in a particularly awkward position, especially in terms of energy security, as the implications of the crisis could prove much more complicated than a brief energy supply cut-off (e.g. 2006, 2009). This conflict has also pointed out the urgent need for a more unified European energy policy and initiated a cycle of actions that strengthened the EU's energy security, mainly with respect to gas supplies, that included higher diversification for the member-states that depend on a single supplier and considerable improvement of their infrastructure. Additionally, as will examined in more detail later, the Union has developed high levels of interconnections, that bring the prospect of the internal energy market one step closer and has also succeeded a relatively balanced energy mix (European Energy Security Strategy, COM 2014). Nevertheless, more collective work is needed from the Union, because the level of regional cooperation still needs much improvement, for more coordination within the internal market as well as for external action.

An initial challenge for the Union that stems from the Russian - Ukrainian conflict is the fact that many member states, such as Greece, Bulgaria, Hungary, Romania and the Balkan member states are entirely dependent on the transit route across Ukraine, for almost all the Russian gas that they receive. Furthermore, currently and while dealing with the Ukraine crisis, the dialogue between the two powers, where the core until recently was to promote their bilateral relations, create a stable environment with regard to energy trade and protect equally both sides with ultimate goal to create 'a single energy space', has changed before it can even be

materialized. This dialogue has now been replaced by mutual desire for diversification. From the Russian side, diversification away from the EU would mean its involvement into long-term contracts with considerable forces, such as its gas deal with China (May 2014). With respect to the EU, diversification would lead to the increase of its bargaining power and its energy efficiency and the means to that would be to diversify its energy mix and its energy sources through the support of the renewable development and of other indigenous energy sources, as well as the development of the appropriate infrastructure. In fact, the EU in order to control this high dependence on Russian gas and in a way to support the diversification process, passed a regulation, the so-called N-1 standard, which requires the member-states to ensure that their companies will be able to fulfill the market's demand for gas in case of an energy cut-off from their main supplier.

Any diversification however, does not mean in any case that there is even a slight possibility for the two powers to stop depending on each other. Europe is Russia's largest energy importer and large investments in pipelines and storage facilities have been made towards maintaining this status. Therefore, for the time being the two powers are obliged to deal with the issues that the developments with Ukraine have brought, in order to keep their cooperation and interests intact. On the other hand, the Union cannot overlook the fact that Ukraine's energy security is the former's responsibility, as Ukraine has been a member of the Energy Community since 2011 and also, has openly stated its intention to become an EU member-state. Currently Ukraine is facing an energy crisis, which stems from Russia's unwillingness to provide any gas to Ukraine unless it is paid in advance, even though Russia is still using Ukraine as a transit route in order to deliver its gas to the EU, a crisis that the Union has to overcome along with Ukraine and at the same time protect its own interests as well.

More specifically, the main priorities of the European Energy Strategy were to achieve a sustainable, competitive and secure energy for all member-states. The means to achieve that goal was first of all to stop protectionism and create a single, open European electricity and gas market that would allow prices to fall, strengthen competitiveness, create a more stable and secure environment in terms of energy supply and also help the Union get one step closer to its environmental goals, since enhanced competition would push companies to stop using energy inefficient plant

and invest more in environmentally cleaner solutions. Currently, the Union is the only power that is producing "50% of its electricity without greenhouse gas emissions" (COM 2014) and is not willing to allow this percentage to fall, therefore its environmental goals along with the promotion of further cooperation amongst the member-states remain vital components of the 2030 policy framework which included eight key pillars:

- Immediate actions so that the Union would be capable to overcome an abrupt disruption of its supplies during the winter 2014-15
- Empowering the emergency/solidarity mechanisms, the coordination of the necessary actions, like risk assessments and contingency plans and the protection of strategic infrastructure
- Mitigate its internal energy needs
- Building a well-functioning and fully integrated internal market
- Focus more on the development of energy technologies
- Diversify external imports as well as the related infrastructure
- Further coordination of national energy policies and complete integration with regards to external energy policy (COM, 2014).

In order to address those issues and tackle its energy security challenges the EU has made much progress. One very important priority that the Union concentrates on, is improving the overall storage capacity, developing reverse flows, taking advantage of the LNG option and constructing back-up plans. For instance, there are indeed some member-states that already have the ability to maneuver in order to fulfill their domestic energy demand during an emergency energy cut-off, in case for example gas flow from Ukraine stops; even though in most cases the complete replacement of Russia is almost impossible. For instance, Finland is already able to use other types of fuel for electricity production. Latvia's gas storage is larger than its annual demand, therefore it has the capacity to fulfill its needs and in case of an emergency cut-off, Latvia could supply Estonia as well. Lithuania's construction of a floating terminal to store and re-gasify LNG from multiple sources provides the country more agility and Poland, who is not such a big gas consumer, but most of its gas comes from Russia, is also building an LNG terminal in order to be able to import gas from alternative sources. Moreover, Slovakia, has the ability of a reverse gas flow from Austria, as well as from the Czech Republic, and so is Hungary, but since

Hungary's gas consumption is very high and 98% of it comes from Russia, it can only be partially replaced. Greece is another member-state with an LNG gas terminal and Romania, has a considerable amount of gas production of its own, therefore only 10% of its needs are met by Russian gas (COMM, 2014).

Furthermore, with respect to the gas flow via Ukraine stops are the two already existing pipelines, the Yamal pipeline through Belarus to Poland and the Nord Stream pipeline linking Russia to Germany. However, these two options concern a re-route of Russian gas, they do not offer an alternative to it, therefore EU's dependency on Russia is not confined, while undermining Ukraine's position. The best alternative option is considered to be North Africa, despite the regional problems resulting from the "Arab Spring", especially in Libya and Egypt, it is considered as a good opportunity for gas production to thrive. Another potentially good alternative would be the Caspian gas, but still many issues remain to be resolved, the LNG option and the shale-gas option as well. Finally, due to the recent (2011) gas discoveries in Cyprus and Israel, big steps are being made towards the entry of the Eastern Mediterranean into the energy production game; therefore, another aspiring supplier might be being born for the EU (COMM, 2014 and Goldwyn, Kalicki, 2013).

Respectively for oil supplies, no immediate threat is being detected for the EU, mainly due to the interdependence among the EU, Russia and the US, since the Union is a gasoline net exporter, a diesel net importer and due to the sufficient refining capacity, therefore EU's efforts focus on making the oil market more transparent, fair and competitive. Nevertheless, it is required that the member-states have minimum reserves of crude oil and other petroleum products in case of an emergency supply disruption. However according to the European Commission, there are still some issues that need to be examined further, such as the "extensive dependence of the EU's refinery industry on Russian crude oil, the increased concentration in the Russian oil industry and the increased ownership of EU refinery capacity by Russian oil companies, as well as the amount of the refined products consumed in transport" (COMM, 2014).

Consequently, the EU in an effort to remain competitive should avoid overdependence on imported refined petroleum products and increase its own refining ability, a project that requires high levels of investment as well. In the long run, the Union desires to reduce its oil demand and therefore its dependence through a series

of measures that target the greenhouse gas emissions and promote the consumption of alternative fuels in the transport industry. Again, main priority is to significantly decrease dependency on Russia, by finding ways to diversify EU's crude oil imports for its refineries, a target that can only be achieved through intense coordination between the member-states (COMM, 2014).

Moreover, the Union has to make sure that any strategically important infrastructures can be effectively protected and that through the intensification of the collaboration among its member-states the most vulnerable members will be efficiently protected and supported, a goal that can only be addressed through careful planning on a collective level. To that end, the Gas Coordination Group is one example that has been proved very valuable, a platform that includes member-states, regulators and all stakeholders and serves to the exchange of gas-related information between the participants and to the coordination of their actions.

High on the Union's priority list is also to decrease the internal energy demand, through the implementation of certain policies, without any further delays, by all member-states and at the same time to increase the indigenous energy production. The Energy Efficiency Directive (EED) and the Energy Performance of buildings Directive (EPBD), would be a very good start, since they would both help to moderate the energy needs of the Union and save capital at the same time. These policies include simple and effective solutions, such as the renovation of outdated buildings, heating and cooling systems and an improved Emissions Trading System for the industry field. Also, the exploitation of new hydrocarbon discoveries (Eastern Mediterranean, Black Sea) could ultimately contribute to the increase of the indigenous energy production and assist the diversification process of the Union. Finally, it is highly important that decisions over energy are not taken unilaterally, on a national level, but extensively discussed on a Union level, so that the risk of compromising another member's energy security is limited. This practice also serves to the further integration of the Union's energy market and in fact in a more cost-effective way and helps to the promotion of certain targets of the Union, like more fluid and based on rules international energy markets with more stability and transparency (COMM, 2014).

3.2.2 EU's dependence on Russian gas

The last decade's data regarding EU's gas imports originating from Russia clearly demonstrate the extreme dependence of the member-states on the latter (see Table 2.2). The most remarkable increase recorded comes from the United Kingdom, which up until 2005 did not import any Russian gas, but it has now become Russia's fourth largest importer. Despite the slight demand decrease, mainly due to the economic crisis and the fact that many member-states have achieved some good levels of diversification, Russian gas imports still represent 37.5% of EU's total gas imports, as mentioned earlier (see Table 2.1). Furthermore, the majority of Russian gas deliveries to European states are covered by long-term contracts, which can be binding for 10 to 35 years. More specifically, those contracts include take-or-pay clauses (OIES Paper: NG 92, 2014) that bind the buyer to pay for a minimum quantity per year either this quantity is going to be consumed after all or not. Therefore, Gazprom's customers are obliged to buy a specific amount of gas each year for as long as the contract lasts, no matter if they need that quantity or not and in case they prefer to terminate that contract before its expiration date, there are specific limitations that make that option less attractive to them. Of course, those contracts are binding for the other side as well, meaning Russia, who no matter the circumstances has to fulfill its contractual obligations and deliver the expected gas quantities on time.

Table 4.3 Russian Gas Exports to European Countries 2003–2015 (bcm*)

	2003	2004	2005	2006	2007	2008	2009	2010	20011	2012	2013	2014	2015
WESTERN													
Austria	6	6	6,8	6,6	5,4	5,8	5,4	5,6	5,4	5,4	5,2	4,2	5
Belgium	0	0	2	3,2	4,3	3,4	3,4	0,5	0	0	0	0	1,5
Denmark	0	0	0	0	0	0	0	0	0	0,3	0,3	0,4	0,7
Estonia	0,8	0,9	1,3	0,7	0,9	0,6	0,8	0,4	0,7	0,6	0,7	0,4	0,5
Finland	5,1	5	4,5	4,9	4,7	4,8	4,4	4,8	4,2	3,7	3,5	3,1	2,8
France	11,2	14	13,2	10	10,1	10,4	8,3	8,9	8,5	8,2	8,6	7,6	10,5
Germany	35	40,9	36	34,4	34,5	37,9	33,5	35,3	34,1	34	41	40,3	47,4
Greece	1,9	2,2	2,4	2,7	3,1	2,8	2,1	2,1	2,9	2,5	2,6	1,7	2
Ireland	0	0	0	0	0	0	0	0	0	0,3	0,5	0,2	0,2
Italy	19,8	21,6	22	22,1	22	22,4	19,1	13,1	17,1	15,1	25,3	21,7	24,4
Latvia	2,4	1,2	1,4	1,4	1	0,7	1,1	0,7	1,2	1,1	1,1	1	1,3
Lithuania	2,9	2,9	2,8	2,8	3,4	2,8	2,5	2,8	3,2	3,1	2,4	2,5	2,2
Netherlands	2,3	2,7	4,1	4,7	5,5	5,3	4,3	4,3	4,5	2,9	2,9	4,7	8,4
Switzerland	0,3	0,3	0,4	0,4	0,4	0,3	0,3	0,3	0,3	0,3	0,4	0,3	0,3
Turkey	12,9	14,5	18	19,9	23,4	23,8	20	18	26	27	26,7	27,3	27
United Kingdom	0	0	3,8	8,7	15,2	7,7	11,9	10,7	12,9	11,7	16,6	15,5	22,5
Sub-Total	100,6	112,2	118,7	122,5	133,9	128,7	114,2	107,5	121	116,2	137,8	130,9	156,7
EASTERN													
Bosnia and Herzegovina	0,2	0,3	0,4	0,4	0,3	0,3	0,2	0,2	0,3	0,3	0,2	0,2	0,2
Bulgaria	2,9	3	2,6	2,7	2,8	2,9	2,2	2,3	2,5	2,5	2,9	2,8	3,1
Croatia	1,2	1,1	1,2	1,1	1,1	1,2	1,1	1,1	0	0	0,2	0,6	0,6
Czech republic	7,4	6,8	7,4	7,4	7,2	7,9	7	9	8,2	8,3	7,9	0,8	0,9
Hungary	10,4	9,3	9	8,8	7,5	8,9	7,6	6,9	6,3	5,3	6	5,4	6
FYROM	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Poland	7,4	6,3	7	7,7	7	7,9	9	11,8	10,3	13,1	12,9	9,1	8,9
Romania	5,1	4,1	5	5,5	4,5	4,2	2,5	2,6	3,2	2,5	1,4	0,5	0,3
Serbia	1,9	2,3	2	2,1	2,1	2,2	1,7	2,1	2,1	1,9	2	1,5	1,9
Slovakia	7,3	7,8	7,5	7	6,2	6,2	5,4	5,8	5,9	4,3	5,5	4,4	3,8
Slovenia	0,7	0,7	0,7	0,7	0,6	0,6	0,5	0,5	0,5	0,5	0,5	0,4	0,5
Other Contries	0	0	0	0,4	0,5	0,6	1,2	2,1	1,3	0,8	1,2	6,6	5,4
Sub-Total	44,6	41,8	42,9	43,9	39,9	43	38,5	44,5	40,7	39,6	40,8	32,4	31,7
GRAND TOTAL	145,2	154	143,5	166,4	173,8	171,7	152,7	152	161,7	155,8	178,6	163,3	188,4
Deliveries under long term contracts**					158,8	168,5	142,8	138,6	150,3	139,9	166		

Source: Gazprom in Figures: 2005–2009, p.56; 2008–2012, p.63; 2009–2013, p.67; 2011-2015, pp.81-82

Overall, the most dependent regions seem to be the ones located in the south-east Europe and the Baltic countries. In 2015 south-east Europe's gas needs, and more specifically, Bulgaria, Serbia, Bosnia & Herzegovina, FYROM and Slovakia, were met by Russian gas imports via pipeline (through Ukraine). For Hungary, Slovenia and Greece, the numbers are relatively lower, two thirds of their gas imports were met by Russia and Croatia constitutes the only one within this region that depends on Russian imports for significantly low quantities. Respectively for the Baltic States and Finland, their gas requirements were covered entirely by Russia via pipeline imports, apart from Poland whose numbers differ, as only half of its needs were covered by Russian imports (Table 2.2).

So far, the EU's strategy to accomplish gas transit security was to apply the energy acquis both to suppliers and transit states through the Energy Community and its principal target, which still stands, to apply competition-based market rules on the energy market. However, since 2014 the EU is trying to promote the establishment of the European Commission as its only voice when it comes to external suppliers. The European Commission has mobilized two different ways to measure its members'

energy dependence, the already mentioned N-1 standard, as well as a "country-specific supplier concentration index" (OIES Paper, 2014), the SCI. Five of the member-states' failure to meet the N-1 standard in 2013, namely Bulgaria, Greece, Lithuania, Estonia and Slovenia, was due to their high dependence on Russian gas.

The SCI, measures the diversification level of each member-state. The lower the SCI value of a state the larger its diversification level, therefore higher values indicate higher dependence on a single supplier. However, the SCI value of a state might be higher if that state uses its storage facilities or in case large quantities of Russian gas are being transported through its territory. The purpose of this measuring tool is to indicate the changes recorded within the years. As shown in Table 2.3 most European countries are highly depended on Russian gas, and more specifically Austria and the Czech Republic show increasing values, unlike Greece and Bulgaria whose values are declining over the years, hence their diversification level is growing.

Table 4.4 EU Member State Country-Specific Concentration Index* for Natural Gas supplies from outside the European Economic Area 2000–2012

	2000	2005	2009	2010	2011	2012
Austria	42.7	49	63.7	61.8	79.8	96.8
Belgium	7.8	5.1	11.8	7.8	14.6	1.6
Bulgaria	87.5	76.8	97.3	85.8	74.1	69.5
Croatia	16.8	15.3	11.7	10.4	0	0
Czech Republic	61.1	56.4	46.6	57.3	118.5	79.3
Denmark	0	0	0	0	0	0
Estonia	100	100	100	100	100	100
Finland	100	100	100	100	100	100
France	14.5	8.8	6.3	4.7	5.1	4.2
Germany	15.1	17	11.6	14.1	15.7	15.3
Greece	60.5	71.3	38.1	39.8	40.1	35.7
Hungary	44.3	36.8	51.2	57.5	48.9	63.4
Ireland	0	0	0	0	0	0
Italy	24.7	17.9	16.6	16.4	16.1	16
Lithuania	100.1	101.3	100.7	99.4	100.5	100.1
Luxembourg	100	100	6.9	6.9	6.9	6.8
Latvia	103.9	111.5	130.1	38.2	119.7	129.5
Netherlands	0	0.8	0.5	0.5	0.2	0.4
Poland	30	22.7	31	38.8	41.1	34.7
Portugal	76.9	56.9	37	42	46.2	38.6
Romania	3.9	9.1	2.2	2.7	3.6	3.3
Slovenia	51.2	51.3	31.9	32.5	28.2	20.1
Slovakia	97.6	105.6	116.8	99.8	109.9	82.3
Spain	39.4	25.2	19.8	19.8	24	26.5
Sweden	0	0	0	0	0	0
UK	0	0	0.4	2.2	0.5	n/a

Source: EU Commission (2014d), Table 12, pp.151–2

In addition to their level of dependence, the above-mentioned data indicate the most vulnerable European states in case a gas flow disruption occurs. The high levels of vulnerability of many member-states has set the control of gas demand as a primary target, since by limiting their gas demand the situation could be dramatically altered in the near future. However, projections show that gas demand for the most depended on Russian gas EU countries will continue to rise. In fact their demand rates are estimated to increase by 2030 (see Table 2.3), also indicating the amounts of gas that the substitution of Russian gas would require.

Table 4.5 Gas Demand Projections for Countries Highly Dependent on Russian Gas 2015–2030 (bcm*)

	Gas Demand in 2013	Russian Gas Imports in 2013*	Gas Demand Projections			
CENTRAL EUROPEAN COUNTRIES			2015	2020	2025	2030
Austria	8.53	4.79	8.53	7.54	7.60	7.11
Czech Republic	8.47	7.27	8.08	8.69	8.68	9.94
Slovakia	5.81	5.06	4.72	4.86	6.19	7.66
Poland	18.31	11.87	15.73	17.08	19.49	21.07
Hungary	9.28	5.52	10.65	11.12	10.37	9.79
TOTAL	50.4	34.51	47.70	49.30	52.33	55.57
BALTIC COUNTRIES						
Estonia	0.68	0.64	0.34	0.38	0.41	0.43
Latvia	1.73	1.01	1.83	1.93	2.05	2.13
Lithuania	2.71	2.21	3.24	3.47	3.75	4.03
Finland	3.48	3.22	2.33	2.35	2.72	3.06
TOTAL	8.6	7.08	7.74	8.13	8.92	9.65
SOUTH EAST EUORPEAN COUNTRIES						
FYROM	0.16	0.09	0.12	0.12	0.12	0.12
Bosnia/Herzegovina	0.19	0.18	0.26	0.27	0.29	0.30
Bulgaria	2.59	2.67	2.89	3.03	3.14	3.29
Serbia	2.52	1.84	2.30	2.30	2.30	2.30
Greece	3.84	2.39	4.32	4.10	3.85	3.64
TOTAL	9.3	7.17	9.89	9.82	9.69	9.65
GRAND TOTAL	68.3	48.76	65.33	67.25	70.95	74.86
Turkey	45.64	24.57	49.56	59.26	65.58	70.62

Source: OIES Paper (2014), Table 4, p. 10

At the same time, the indigenous gas production is projected to fall, proving that Europe cannot use its own means in order to replace even some of the amounts of natural gas it imports from Russia. For instance, Norway's gas production, currently the largest European gas producer, is projected to decline within the next years, with its gas sales accounting for 103 bcm in 2013, 100-125 bcm in 2020 and 75-115 bcm in 2025, a situation that cannot be reversed unless new discoveries take place.

Meanwhile, the alternatives for Europe are very limited. First of all, Europe is lacking significantly when it comes to the necessary infrastructure for imports of non-Russian gas. Prior to 2020, the prevailing option is to import Azeri gas through a pipeline via Turkey. However, the quantities that Azerbaijan can provide at the moment are small and are not projected to rise prior to 2030. Furthermore, even though the existing pipeline system is much extended, it is not evenly distributed, a fact that could affect a lot the timing of the deliveries, not to mention that some regions might face difficulties receiving the gas. For instance, regions that currently import from Russia their entire or most of their gas, like the Baltic States, central-east and south-east countries are not sufficiently interconnected to the rest of the European states, and therefore will probably encounter many issues with the aforementioned alternative option, unless they decide to make big investments in order to build the necessary infrastructure. Secondly, another challenge that Europe has to face is the

price of non-Russian gas. The proximity and the already existing infrastructure have allowed to Europe access to relatively low gas prices when it comes from Russia, prices that would be very difficult to achieve with newer suppliers.

However, in the aftermath of the Ukraine crisis (2009) the EU was alarmed and begun taking more substantial action in order to increase its energy supply security and enhance its infrastructure towards that end, by setting up the European Energy Programme for Recovery (EEPR). The EEPR would provide €3.8 bn to energy related investments, with most of them directed to gas infrastructure. That way many interconnection projects were enabled (Hungary- Croatia, Romania-Hungary, Poland-Czech Republic, Bulgaria-Romania, Greece-Bulgaria, Slovakia-Hungary), projects for the enhancement of national networks and for the creation of reverse flows facilities (Austria, Poland, Latvia, Lithuania, Czech Republic, Slovakia) as well as for the construction of an LNG terminal (Poland).

The Union took further action by adapting new legislation in order to ensure its energy supply security in the future, namely the "Security Regulation", which among others introduced the already mentioned N-1 standard, established the minimum supply standard and made the reverse-flows mandatory for the interconnected member-states; and the "Infrastructure Regulation", that demonstrated the mandatory infrastructure projects. In order to facilitate all the above, considering that large amounts of capital would be required, the Union also put into force a regular budget, "Connecting Europe Facility" (CEF) to co-finance such projects.

3.2.3 Diversification Options

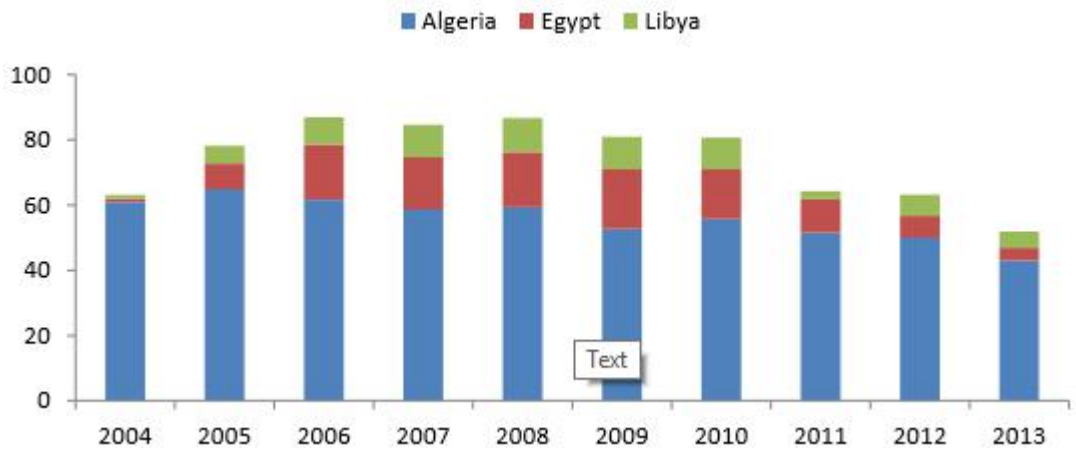
Another very strong competitor for becoming the predominant gas supplier in replacing some of the gas volumes that Europe is currently importing from Russia, is North Africa (Algeria, Egypt, and Libya), where large amounts of proven natural gas are located (7.8 tcm). North Africa has long been a gas supplier of Europe, particularly the second largest non-European gas supplier, but even so, the chances of increasing its exports in the near future are again very low. During the last years and due to political turmoil, North African gas exports have declined significantly (see figure 2.2) and in the aftermath of the Arab Spring, the attraction of investments has been a very complicated task for that region, while the internal demand has

immensely increased, two crucial factors that will certainly delay the development of North Africa's export program, making that option a longer-term alternative for Europe.

The opening up of the Southern Gas Corridor is another diversification strategy for the EU. That means direct connection of the EU to the Azerbaijani Shah Deniz gas field, using the South Caucasus pipeline to transfer the gas via Georgia to Turkey. This alternative, however brings along many issues, especially with the ongoing situation in Turkey, in addition to the fact that both Georgia and Turkey are only observers to the Energy Community, therefore they have no obligation to implement the acquis communautaire of the EU. The next plan of the EU, also includes Turkey, and it is the Trans-Anatolian Pipeline (TANAP), which also includes the provision that the pipeline will be operated by the State Oil Company of the Azerbaijan Republic (SOCAR), something that concerns the Union, due to the latter's speculation that imports from more countries could be transferred through that pipeline, a decision that under these circumstances would lie on the company's hands as well as the transit fees.

The original plan, whatsoever, was the construction of the Nabucco pipeline that would cross the Eastern Turkish border and would end up in Austria, which was also in accordance to the EU's acquis and the related agreement has been ratified from all the participating countries (Austria, Bulgaria, Hungary, Romania, Turkey), however in 2012 was replaced by TANAP and reduced to "Nabucco West" and in 2013 was completely withdrawn and replaced by the Trans Adriatic Pipeline (TAP) and the Ionian-Adriatic Pipeline (IAP), which took the place of Nabucco West.

Figure 4.2 Gross North Africa gas exports, 2004-2013 (bcm)



Source: OIES 2014

One more alternative for Europe is Iran, which holds the world's largest natural gas reserves and which after the lifting of the western sanctions against it, is looking to regenerate its gas supplies, targeting mainly the European markets within a two-year time-frame. Iran is closely exploring the idea of becoming a part of the LNG trade, for which it will need the completion of the construction of the necessary liquefy facilities (Iran LNG project). Alternatively, to the LNG project, as the managing director of National Iranian Gas Export Co. Alireza Kameli has said there are two options, either the construction of a pipeline beneath the Persian Gulf (Oman), where LNG facilities are located or in cooperation with Europe the construction of floating LNG facilities that would also take less time to build. In fact, European officials are already making statements concerning Iran and its potential role in assisting Europe lessen its dependence on Russia. However, this option might take some time and lately Iran seems to be showing more interest towards the market of China rather than the European market. Nevertheless, Iranian exports to Europe are estimated around 25 to 35 bcm per year by 2030, if the necessary infrastructures are to be completed. At the same time, Europe could turn to a different country in the region with high energy resources- Iraq. However, Iraq remains a very unstable region, with high violence rates, terrorist attacks and political instability. Therefore, it is still very unclear when it is going to be ready to begin its export activity and how much gas will after all reach to the European markets (COMM, 2014).

One very widespread alternative option is the LNG imports. A rather flexible option that could assist EU's diversification effort substantially, as it enables the member-states to import gas from many different suppliers, therefore an opportunity

for the United States to be included in EU's energy security agenda, a venture that will also be facilitated by the Transatlantic Trade Investment Partnership (TTIP) as well, nevertheless, in this case large investments would be required in order to build the appropriate infrastructure. In any case, not all European countries have re-gasification terminals thus the ability of LNG to reach all states that require it, especially the ones that are heavily relied on Russia, is questioned. Another issue that derives from the utilization of LNG as an alternative to Russian gas is, of course, its price. LNG is generally an expensive fuel, especially when compared to Russian gas and keeping also in mind the Asian demand for LNG, it will be very difficult for the latter to become competitive enough and therefore replace large amounts of Russian gas. In any case, Russia will always have the leverage towards LNG and the ability to adjust its supply-plan to protect its own interest and to not lose its best clients.

Furthermore, LNG infrastructure is another fundamental necessity that Europe lacks of. With a total of 185 bcm of LNG regasification capacity, situated mainly in north-west (UK, Netherlands, Belgium), south-west (Italy, Spain, Portugal) and south-east (Greece), the Baltic states are found again in an unfavorable position, with one storage and re-gasification terminal so far (Lithuania, Klaipeda) and one LNG import terminal (Poland, Świnoujście) built so far. This situation can only be reversed with large investments. However, those projects require careful planning in order to ensure their economic efficiency, as the data until today indicate that the already existing LNG infrastructures are not being adequately utilized (22% utilization in 2013).

During the last years and with high expectations, especially after the shale-gas boom in the United States, shale-gas has been considered by some analysts a very promising alternative option for the EU in a gas-flow disruption scenario, but also as an additional perspective that would help the Union limit its overall energy imports by substituting them with its indigenous shale-gas production. Despite the negative reactions to the matter, especially environmental ones, the fact that many European countries (Norway, Hungary, Germany, Denmark, Latvia and many others) have already proven shale-gas reserves and planning their next moves, as well as the example of the US who is already extracting, are the reason that shale-gas has been characterized as a promising option. However, this is an option that does not seem to change the overall import dependency of the Union at all in the near future, but in the

longer term, assuming of course that after all it will play a role in the Union's Energy Policy agenda.

Estimations for quantities of recoverable shale gas up to 16 trillion cubic meters (tcm) have motivated many European countries to consider that option and start processes in order to begin its exploitation the soonest possible. Twenty countries have already gave the green light to exploratory drilling. Poland has emerged as a frontrunner, with 64 exploratory wells already in action since 2014, many of which have already been fracked as well. The results were underwhelming and many large companies decided to withdraw from the region, however there have been some positive results as well, by Chevron, ConocoPhillips and San Leon Energy.

The United Kingdom is another country that has considered the shale gas option very seriously, however incidents of earth tremors at Blackpool that traveled around the world news, put a halt to any operations in the region and created dissatisfaction within the local communities. Oppositions from local communities and environmental organizations are a primary enemy of any developments regarding shale-gas production in general, but the British government in particular claims that has carefully planned its next moves in order to neutralize such reactions and attract investments too, but this will cost even more time. Generally, progress on that area is moving in slow pace and due to the environmental impact, which is still unclear, many countries have banned drilling and fracking. Therefore, not only the estimations of recoverable shale-gas quantities cannot be verified, but the potential production time frame cannot be projected too. On the other hand, discoveries of new hydrocarbon reserves of significant importance in the East Mediterranean, located at the Levant basin, have set the expectations' bar very high for the Union (COMM, 2014).

Four prior energy importers' offshore territories, namely Cyprus, Lebanon, Palestine and Israel constitute the Levant basin. Offshore Israel and Cyprus the discoveries of exploitable natural gas have been estimated at 975 bcm, an amount that can transform those two prior energy importers to potential gas exporters, whose most likely consumer is Europe when considering their close relations and proximity. This new alternative could substantially enhance the Union's diversification effort and reduce its dependence on Russian gas; and exploration has not been completed yet, so there are possibilities for even more discoveries offshore Lebanon and Syria.

However, it is highly unlikely for the Eastern Mediterranean gas to start flowing to Europe before 2020, apart from possibly some small amounts of LNG Israeli gas, through the Egyptian LNG terminals. Projections beyond 2020 are very inconclusive still, since there are not enough and decisive data that would allow those projections to be accurate enough (Goldwyn, Kalicki, 2013 and COMM, 2014).

Finally, European states could replace the Russian gas that they receive with other kinds of fuel. In that case, most likely options would be oil products and coal. Substituting gas for oil though would reverse all the efforts of the last two decades to introduce gas to the market in order to reduce oil consumption, since gas is cleaner and easier to regulate. Coal is a very strong candidate for the substitution of gas since it is in abundance in many European states, but would also cause even more environmental problems. Wider use of oil products and coal automatically means that Europe would have to draw back from its environmental targets of reducing greenhouse gas emissions. Also this option would not be sustainable for more than a few months and most importantly the amounts of Russian gas that non-gas fuels would be able to substitute is very questionable (COMM, 2014).

3.2.4 EU's dependence on Russian Energy- more insecurity sources

European Union's very high dependence on Russian energy equals to higher rates of insecurity and affects the power balance of the region. This energy dependence on Russia is expected to rise even more and it could have further consequences on the Union, unless the latter finds a way to reverse this constant by taking actions towards the strengthening of its negotiating dynamics.

Generally, the majority of the EU's external energy imports originate from regions with not very stable environments and as proven in the recent past, from suppliers prone to supply disruptions. Libya is a very good example of how vulnerable the relations between states can be when it comes to energy supply. During 2011-2012 and due to the hostilities at the region which led to the flight of the Gaddafi regime and the complete pause of exports, the Libyan imports were annihilated for a period of nine months (April-December 2011) and were at very low levels even during 2012, affecting European states, including Greece, Spain and Italy. Another case, similar to Libya's, is that of Iran. When the European Union decided to

impose embargo on importing Iranian crude, because of the compliance sanctions that the United States applied against Iran, some members including Greece were particularly affected. The two major Greek refineries, Motor oil and HELPE, constructed in order to be able to process the variety of the Iranian oil and which also had very favorable contracts that allowed them to buy at very competitive prices, were now forced, within a few weeks, to find equivalent amounts of alternative supplies and even though they achieved that goal, they still had to adjust to significantly higher prices and without favorable payment terms (Roinioti, Stampolis, 2013).

Other recent cases that caused to Western Europe serious energy shortfalls, such as January 2009, due to Russia's gas delivery suspension to Ukraine, January 2007, due to oil delivery suspension via Belarus, not to mention the still ongoing conflict between Russia and Ukraine, prove that an energy supply disruption scenario is indeed very possible and as the Commission of the European Communities concludes "EU's vulnerability is not limited to commercial disputes, as in the case of 2009, but it is also detected when it comes to the risk of accidents or technical failures of the gas import pipelines".

Whichever the case, the primary source of the Union's vulnerability remains Russia. Important concerns with respect to Russia are mostly political, since there are fears that the latter could use its energy exports as a political lever against the Union, by threatening to periodically turn off the supplies, leaving Western Europe with a critical energy gap or even shape foreign policies in its favor, especially of the Newly Independent States (NIS). Even though a "hard power" approach is considered to be anachronistic "the single-minded pursuit of realpolitik by energy blackmail" (Sola & Smith, ed/s, 2009) is one of President Putin's hallmarks and statements such as Vagit Alekperov's the President of LUKOIL, who has hinted that it is unlikely for states whose oil sector is largely owned by Russian companies, such as Bulgaria, to pursue an anti-Russian foreign policy (Hill, 2005), reinforce even more the concerns of the EU.

Another area of concern within the Union is the fear of long-term foreign policy distortion. The possibility of more economically advanced member-states, such as Germany, to be drawn even closer to Russia through long-term contracts with favorable terms, in order to ensure their own energy security, leaving the rest of the member-states unsupported, which could lead to a severe alienation and ultimately to

the disintegration amongst the member states. This became more evident with the attitude of Germany while dealing with the Ukraine crisis, since Germany has been unwilling to join the enforcement of serious sanctions against Russia; instead it supported the resolution of the crisis through negotiations between the two. Furthermore, statements such as Donald Tusk's "Germany's dependence on Russian gas may effectively decrease Europe's sovereignty. I have no doubts about that" do not seem to appease those fears.

The relation between the two (EU – Russia) is currently being balanced due to the fact that Russia does not yet have a diversified market for exports. In fact, Russia's oil and gas exports represent 52% of its federal budget and since the EU is currently Russia's largest import market, gives it a certain amount of strength and ultimately restores the balance of power within the region. The reason for this is that both powers, at this point, somehow share the same concerns, because like Russia, the EU could use its strength as an important importer to strike Russia financially or even to pursue its own interests. Furthermore, during the last years it is considered that Russia has entered an era of over-production, due to the rise of independent producers of gas, like Rosneft and Novatek, something that could potentially worsen its position and has triggered talks about the Russian "gas bubble" (Offenberg, 2016).

On the other hand, lately, the ambience is being alternated yet again, as other major markets have also started to show interest in Russia's oil , such as India, Japan, USA and most importantly China, that seems to be more and more interested in Russia's energy sources; countries that are also willing to support financially the construction of new pipelines in order to bring Russian gas to their borders; but whilst their relationship evolves, a security dilemma arises for the EU, forcing the latter to seek for alternative suppliers, especially when it comes to gas, where the vulnerability of the EU is increased, due to the high dependence of many member states as examined earlier. However, if Russia is under the perception that the Union is looking to diversify its energy sources, the former will also intensify its efforts to diversify its exports even more. After all, Russia has proven that it takes policy matters of high significance as energy under a careful examination and that the country, also due to its geography (occupying a large percentage of Eurasia) and to its established alliances, is a state that could take decisions that would have impacted all Eurasian countries to a large or a lesser extent. Ukraine and Azerbaijan and their dependency on

collaboration with both the Russian and the European sides are just minor examples to prove the argument (Monaghan, 2005).

Additionally, Russia is showing tendency to extend its influence on Turkey, Eastern Mediterranean and North Africa, circling Europe and at the same time limiting the latter's options. Turkey's aspirations of becoming a major energy hub are well-known and Russia is looking to monopolize Europe's energy markets, therefore reasonably both sides are looking for a strong cooperation that would serve each ones interests and strengthen their position. In fact, until recently that was the plan. The two sides had reached to an agreement for the construction of the Turkish Stream, a gas pipeline that would extent from Russia via Turkey and would stop at the Greek border, providing to Russia access to the Southern European market. However, even though the intention was present, the project's future has not yet been established due to the deterioration of the relationship between Russia and Turkey. In fact, currently the project is under suspension, due to the downing of a Russian fighter jet by the Turkish side. Ever since, their relations have frozen and Russia even started making moves, exercising pressure, looking to bring Turkey to an uncomfortable position, including its military intervention in Syria. Meanwhile, Turkey has already given much leverage to Russia, considering its heavy dependence on Russian gas and the fact that many Russian companies are now involved in its energy sector. Therefore, the question here would be, for how long is Turkey going to be able to continue to withstand Russia's willingness for expansion (Monaghan, 2005).

In the meantime, Russia aims to extend its influence on the Eastern Mediterranean as well. For instance, Russia is looking for ways to be involved into the Israeli-Cypriot oil and gas discoveries. To that end, the contract that Gazprom along with Trading Switzerland and Levant LNG Marketing Corporation have signed is only the beginning to a long-lasting partnership among Russia, Israel and Cyprus. Further, statements like Cyprus' ambassador to Russia, G. Kasoulides "We have a burning desire to see Russia participate in the development of the fields. We hope that Russian companies will participate in the exploitation of hydrocarbon deposits, which are located in Cyprus' exclusive economic zone. It would be useful for maintaining balance in the region", show the welcoming attitude towards Russia. However, Russian intentions do not stop there- Russia is also looking to be involved in the

developments concerning the Leviathan gas field (Israel), a move that would also give Russia a huge advantage to the LNG market apart from its pipeline dynamic.

Moreover, in Lebanon, Russian companies, such as Gazprom, Rosneft, Lukoil, Novatek, are taking part in the licensing round and Russia is intending to assist the country prevent terrorism as well. Finally, until recently, Gazprom was interested in acquiring a share to the Greek state-owned gas company (DEPA) during its privatization process, a purchase that never materialized whatsoever. However, Gazprom has recently signed an MOU with the Italian Edison and the Greek Depa, a deal proposing the organization of the southern route that Russian gas will follow in order to reach Europe (ITGI Poseidon project). The question here lies on whether all these developments will after all benefit Europe or not.

Considering the above-mentioned moves from the Russian side, the main conclusion is Russia's strong effort to monopolize the European Energy markets. However, monopolizing the energy sector can cause other problems too. Most important one the limitation of the necessary investments for infrastructure. Russian infrastructures are dated and cause many problems, including the loss of the energy product itself due to leakages. Malfunctioning facilities, however, can diminish Russia's ability to correspond to increased demand and considering the increasing trend of its domestic demand, which Gazprom has to cover in prices below production cost, the remaining capital for new investments is not adequate. Russia's energy monopoly has also elevated Russian reserves to be considered as "State secret", a fact that can cause much uncertainty and can therefore deeply affect energy security, since uncertainty can also cause price fluctuations.

3.2.5 Common Energy Policy- Energy Corridors

In the European Union, the approaches to its Common Energy Policy vary, mainly due to the differences among the member-states. The energy mix, the level of dependency on imports as well as the countries where imports originate from are different for each member-state and mainly depend on their location. Consequently, the members that mostly depend on external energy supplies are more willing to go forward with the Common External Energy Policy, however the rest, meaning the ones that are more self-sufficient and import less energy, are more skeptical with the

potential of further integration. Furthermore, states that have the most ability to maneuver and diversify their supplies are not as willing to give up part of their sovereignty and allow to the supranational institutions of the Union make the decisions for them.

The most common strategy to secure their supplies is through bilateral agreements, like the one signed between Germany's BASF and Ruhrgaz and Russian company Gazprom for the construction of the Nord Stream that was considered as a step back with respect to the Common Energy Policy. Nevertheless, that policy is mostly suited for the richest member-states and not for smaller or poorer ones, which are left in a more vulnerable position and with less negotiating power, for which they mostly rely on the EU.

Europe sees as ideal a situation in which oil and gas would be traded as commodities in free energy markets and stop being used as strategic tools. The Union is aware that the most important part of that effort is the construction of the necessary infrastructure that would connect in the best possible way the member states. Towards that end, EU has already taken some actions, as discussed earlier, that limit its energy dependence on Russia and help diversify its options, including the diversification of its energy mixes and sources through the construction of storage facilities and LNG terminals, new pipeline projects and so forth. Moreover, there are already some regional platforms for energy cooperation, such as the Pentalateral Energy Forum (PEF), the North Seas Countries' Offshore Grid Initiative (NSCOGI) and the Council of the European Energy Regulators (CEER) Regional Initiatives for electricity and gas, which cover different geographic areas, even though Germany, the Benelux countries and France are participating in all three. Further coordination towards a Common Energy Policy can also be achieved through information sharing, elimination of cross-border tariffs and joint deliberations with the neighboring countries, when it comes to energy policy decisions, in order to assess the impact on neighboring countries and achieve the harmonization of policies across borders, which can also lead to the finding of more cost-efficient solutions (CIEP 2012). Through deeper cooperation, managing and distributing the "obligations" of each member-state would be more efficient as well, since each member-state would be able to provide according to its capabilities, meaning that each state would have the choice

to depend on a neighbor for some energy solutions and in exchange provide another one.

One very important development for the EU is the prospect of the creation of a new energy corridor, the East Mediterranean Corridor. The prevailing options for the creation of this corridor are a pipeline that will extend from the Eastern Mediterranean to Europe via Greece and Italy, LNG exports or exports in the form of electricity through the installation of an undersea high voltage cable. Whichever the execution, the result will remain the same. The Union's energy security would be extremely benefited, because a new energy route would be established without depending on transit routes or external energy sources as much. Additionally, this new energy corridor would improve the current situation in the region, as it would promote cooperation, especially military, in order to ensure the security of the energy infrastructures to be constructed, which means more stability in a somewhat volatile region. Also, as many observe, a very good strategy for Europe under these circumstances would be its dynamic involvement to any future project that would link the Eastern Mediterranean to the former (COMM, 2014).

Overall, Europe needs to extend its energy corridors and the only way to achieve this is through building the necessary infrastructure. To that end, the priority projects in respect to pipeline construction are:

The **Nord Stream 2**: twin natural gas pipelines across the Baltic Sea, connecting Russia directly to Germany as an addition to the already existing Nord Stream pipelines (55 bcm/year). The agreement was signed amongst Gazprom, E.ON, OMV, Shell, Wintershall and ENGIE. This project is projected to improve Europe's gas supply security mainly for two reasons, there will be no transit fees and Ukraine will be replaced by a strong and with much bargaining power EU member-state, Germany. Nevertheless, this project does not assist the Union with its diversification efforts away from Russia and leaves Ukraine exposed, leaving this way a breach to the Union's energy security approach, where Ukraine's support towards remaining a gas corridor is one of the priorities.

The **Galsi** pipeline: an underwater pipeline that is planned to connect Algerian natural gas to Italy through Sardinia (8 to 10 bcm). The pipeline is projected to

improve Italy's and the EU's energy security and assist to the creation of an Italian gas hub. The European Energy Program for Recovery (EEPR) will be co-financing the project along with Galsi S.p.A.

The **TAP** project: The Trans Adriatic Pipeline (10 bcm) will be connecting the Caspian Sea to Southern Europe, via Turkey, a project planned in order to strengthen the South Corridor of the EU and reduce its natural gas reliance on Russia. TAP will also be linked to the TANAP pipeline at the Turkish-Greek border.

The **TANAP** project: The Trans Anatolian Pipeline (16 bcm), will transfer Azerbaijani gas to Turkey, where it will connect to TAP, in order to move gas to Italy and other European countries. Both are considered to be essential projects in bringing Caspian gas to Europe and further assist the diversification of its energy suppliers.

In addition, the EU is planning to complete missing LNG infrastructure, by identifying the key priority LNG projects. The Central East South Gas Connectivity group (CESEC) has pointed out six priority projects that would open up two main corridors, that of the Krk terminal towards the east and that of Greece to the north. The Baltic Energy Market Interconnection Plan (BEMIP) group, has identified six key projects as well, that would connect the three Baltic States and Finland to the European network. Finally, the South-West Europe high level group has pointed two projects towards connecting regional markets (COM 2016, 49 final). LNG terminals are governed by the Third Energy Package (March 2011) and in this context, the National Regulatory Authorities have the obligation 1.to ensure a level of playing field for existing terminals, 2.to enable the introduction of new services and 3.to continue to enforce transparent and effective of market-based capacity allocation mechanisms at exempted LNG terminals and attract new entrants looking to export their gas market to the EU (COM 2016, 49 final).

The recently constructed LNG terminal of Klaipeda in Lithuania already gave some leverage to the state, which re-negotiated for lower prices with Gazprom for its

natural gas imports via pipeline. More upcoming projects are to take place in Belgium, where the already existing Zeebrugge terminal will be expanded, in France where two out of the three already existing terminals will be also expanded and a fourth terminal is already under construction in Dunkerque. In Greece the Revithousa terminal will be expanded and a Floating Re-gasification Unit (FSRU) is being planned that will supply gas to the markets of South Europe. In Italy, there are already three LNG terminals and there are plans for four additional terminals, in the Netherlands the Rotterdam terminal will be expanded and there are two more terminals under construction in and finally there are also plans for two additional terminals in the UK.

3.2.6 Europe's Existing Pipeline System

The offshore pipelines designed and constructed to transfer gas to the European Union are regulated by the European legal framework, thus by four specific regulations, 1.an environmental impact assessment prior to the construction, 2.the inclusion of the health and safety mandates of the Union and liability insurance, 3.transparency of their operations and publication of data concerning the time of the maintenance procedures of the pipeline and 4.the regulatory treatment of their operation. In most cases, in regards to the offshore pipelines from third countries to the EU, the first three factors are regulated through Intergovernmenal Agreements (IGA), while the regulatory treatment of operation is governed by the Third Energy Package (March 2011).

Europe's pipeline system consists of:

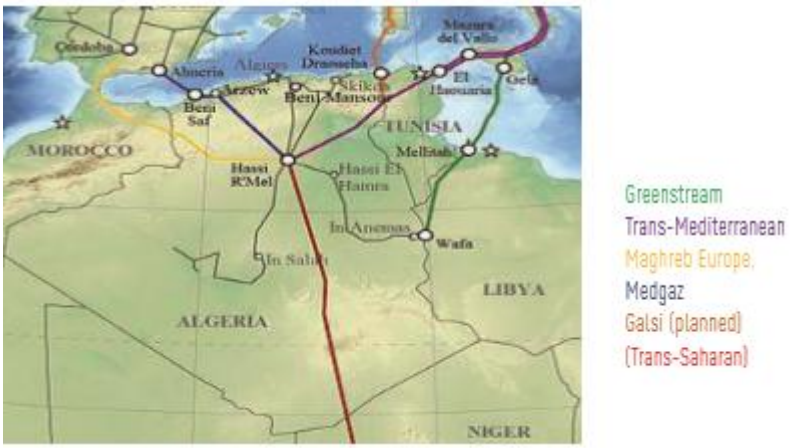
The **Trans-Mediterranean** Pipeline: linking Algeria, Tunisia and Italy (30-33 bcm).

The **Medgaz** project: a pipeline linking Algeria to Spain (8 bcm).

The **Maghreb Europe** pipeline: which is connecting Algeria, Morocco and Spain (12 bcm).

The **Greenstream** pipeline: linking Libya to Italy, an underwater pipeline of 11 bcm annual capacity.

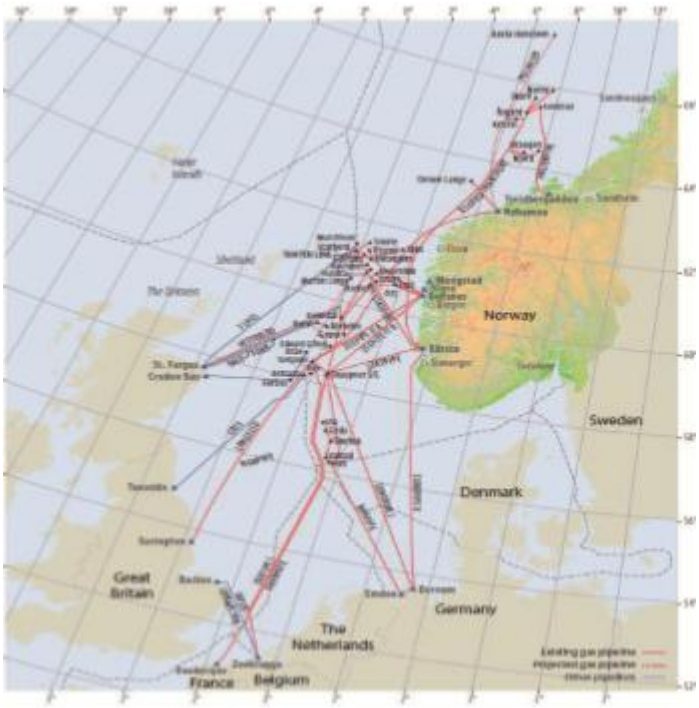
Figure 4.3 Pipelines through the Mediterranean Sea to the EU's Internal Market



Source: Offenberg, P. (2016)

The European pipeline system is complemented by the Norwegian pipeline system (Figure 2.3), which delivers gas to Belgium, France, Germany and the UK, via **Zeepipe**, **Franpipe**, **Norpipe** (oil) **Europipe** 1 & 2, the **Vesterled** and the **Langeled** pipeline respectfully, which are all covered by intergovernmental agreements.

Figure 4.4 Norwegian gas export pipelines to the EU



Source: Offenberg, P. (2016)

The rest of the European natural gas network consists of:

The **Nord Stream** pipeline: linking Russian natural gas to Germany and Central Europe via Ukraine (55 bcm).

The **NEL** pipeline: which compliments the Nord Stream, linking it to infrastructure located in western Germany (20 bcm).

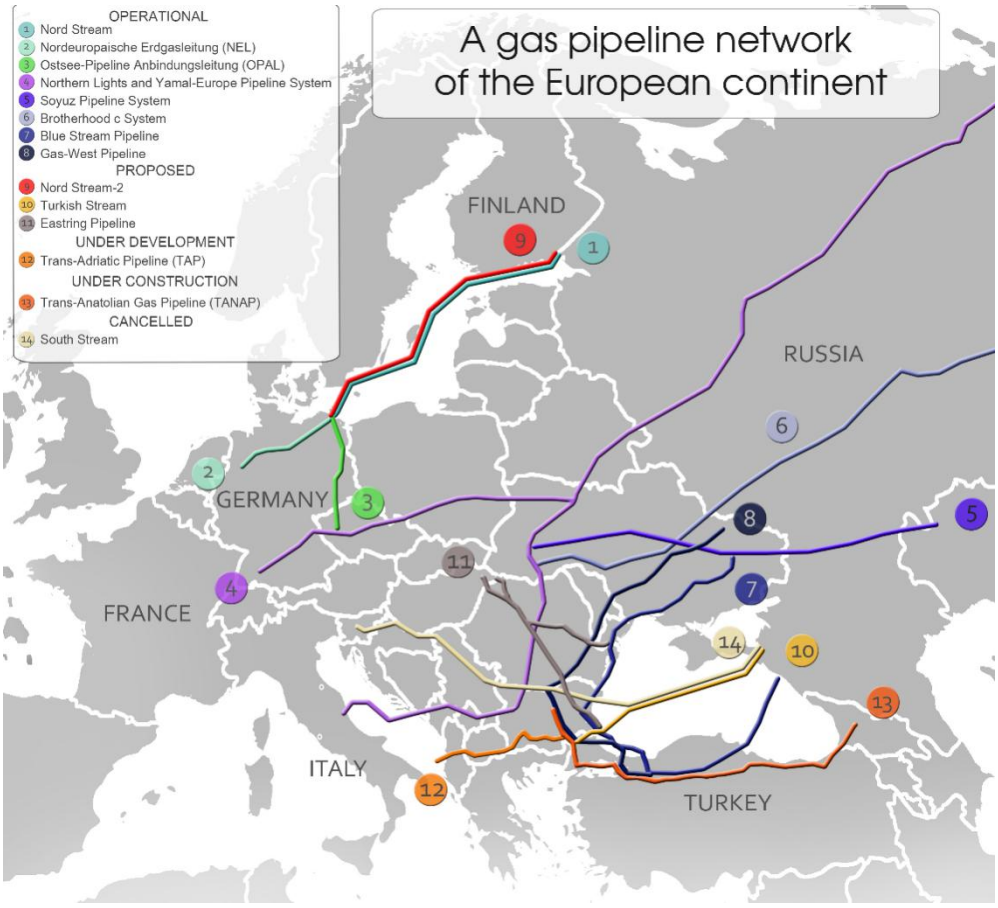
The **OPAL** pipeline: which connects the Nord Stream to infrastructure located in eastern Germany and Central Europe (35 bcm).

The **Northern Lights** and **Yamal-Europe** pipelines: linking Russia directly to Eastern Europe (84 bcm).

The **Soyuz** and **Brotherhood** pipelines: (26 bcm, 132 bcm) that deliver Russia gas to Europe through Ukraine.

The **Blue Stream** pipeline: used by Gazprom to deliver gas to Turkey via Ukraine (16 bcm), along with the **Russian Gas-West** pipeline (16 bcm).

Figure 4.5 European Gas Pipeline System



Source: Southfront.org

Respectfully for oil, the pipelines' share in transporting oil to Europe is small, as 80% of the imported crude is being transported via tankers and vehicles and 20% of it is being transferred through two pipelines, **Druzhba** and **Norpipe**. Oil pipelines are not of significant importance for the oil supply of the Union and are considered to have limited flexibility, high capital cost and used for large quantities, while oil is a very versatile fuel when it comes to its transportation including pipelines, marine, rail and trucks.

3.2.7 Eastern Mediterranean Corridor

It is essential that we take a closer look to the new emerging energy corridor of the Eastern Mediterranean, since it is expected to play an essential role in EU's energy security future. The triggering point of these expectations, the recent discoveries of natural gas and oil reserves within the Levantine Basin, but there are also speculations for the existence of more resources in the region, in Lebanon, Egypt and Greece. Many interesting developments are expected to take form among the key players of that region as well as with their relations to the EU.

The Eastern Mediterranean consists of eight basins (Cyprus basin, Eratosthenes High, Latakia basin, Levant basin, Judea basin, Nile Delta basin, Western Arabian province and Zagros province) (Zemach in Giannakopoulos, 2016). Overall, the Levant basin covers 83.000 km2 of the Eastern Mediterranean, in the east it is bounded by the Levant Transform Zone, its northern boundary is the Tartus Fault, in the northwest it is bounded by the Eratosthenes Seamount, in the west and southwest by the Nile Delta Cone and in the south by the Sinai compressional structures, therefore it extends from the sub-sea area of Egypt northward to Turkey and it includes Israel, Cyprus, Lebanon and Syria as well. Estimations (USGS) indicate quantities of approximately 1.000 bcm in Israel and additional potential of 400 bcm, a potential of 750 bcm in Lebanon, 230 bcm in Syria with potential of 170 bcm and 120 bcm in Cyprus with an expected potential of 960 bcm.

The main characteristic of that region, however is the non-stop security concerns. The unresolved conflicts of Turkey with both Greece and Cyprus, which entails claims to both states' EEZ and constant violations, the deterioration of the Turkish-Israeli relations since the Mavi Marmara incident (2010), Lebanon's claims to the Israeli EEZ, the Israeli-Palestinian conflict, the war in Syria, the dangers that result from the political Islam, the Jihadist terrorism, democracy deficit, large migratory volumes, the foreign policy agendas of powerful states of the region, such as Turkey, Saudi Arabia and Israel, the overall competition of energy resources, the declining role of the US and EU's inadequate policy approach of the region being some of them.

The premier exploratory drilling at the Aphrodite field, located in the EEZ of Cyprus indicates the existence of 5-8 tcf and were followed by further discoveries in the EEZ of Israel. Further explorations in Cyprus were less successful and have put into question the potential of Cyprus to become an energy exporter. However, there is a general perception that, in any case, the island's reserves must be exploited, since that will definitely benefit the island's economy and population, with or without a resolution to the Turkish-Cypriot long-lasting conflict, not to mention that they could also offer a significant incentive for the final resolution to the conflict. In this context Cyprus has already signed EEZ agreements with Israel (2010), Egypt (2003) and Lebanon (2007) that have not yet enjoyed Turkish recognition, who is constantly against the diffusion of tensions in that region. For instance, Turkey does not recognize the Republic of Cyprus, maintains military presence on the island, has claims in the EEZ of both Cyprus and Greece and for that reason it is also constantly obstructing the exploration of areas and supports Lebanon's claims against Israel's EEZ. Cyprus' position can be very much benefited by the ongoing deliberations among Israel, Cyprus and Greece (MoUs) for a potential energy cooperation in order to transfer energy from the Eastern Mediterranean to Europe.

The next discoveries were made in Israel's EEZ, that of the Tamar field in 2009 (280 bcm) and the Leviathan field in 2010 (540 bcm) and there is also much more potential in the area, due to the basin's geology, thus Israel is projected to become a key player for the energy developments in the Eastern Mediterranean. Furthermore, Israel's domestic demand is relatively low and is not expected to exceed 540 bcm for the next 25 years, thus leaving available space for its exports to grow. However, Israel has not yet reached to an agreement for the exploitation of the gas fields with interest holders, in order to be able to speak about a time frame in regards to Israel's export program.

Meanwhile, politically speaking, Israel's relations with the surrounding countries have relatively been stabilized. For instance, currently, Israel respects Palestine's right for hydrocarbon explorations, including the marine area of Gaza, which is under the former's military control. In fact, Israel's Leviathan partners have signed an agreement with the Palestinian Authority as regards gas exports to the West Bank for the fueling of an electricity plant (Jenin). In addition, the president of Israel

Netanyahu is looking to improve Israel's relations with the neighboring countries and to that end, gas exports constitute a good opportunity.

The latest discovery was made offshore Egypt by ENI SPA, a much promising gas field (Zohr), which is thought to be the largest gas field in the Mediterranean and the 20th in the world. Egypt's position, a state that used to be an energy exporter and has recently become an energy importer in 2015 (Ratner, 2016), due to political turmoil and domestic policies, will certainly be affected by this development, as well as the overall energy situation of the region.

The U.S Energy Information Administration supports that the already found energy reserves are enough to fulfil the current energy demand for over 40 years and that the Mediterranean natural gas market has not yet meet its full maturity, since there is the potential of additional natural gas discoveries of 122 tcf (Schenk et al., 2010) and 1.7 billion barrels of recoverable oil in the Levant Basin. However, experts conclude that in order for the region to reach its full potential and meet its exporting prospect, there has to exist a cooperation among the new energy holders. Fundamental prerequisite to that end is to avoid any further delays and speed up the exploration activities.

Another vital prerequisite and a big concern at the same time, is going to be the adequate protection of the energy infrastructures. After the terrorist attacks against the Egyptian pipeline (Sinai) connecting the former to Israel and Jordan, it has become apparent how important security measures are in this fragile region. Last but not least,the regional conflicts that may affect the outcome of hydrocarbon discoveries have to be neutralized in some way, if not resolved. Hydrocarbons could either constitute a strong advantage and motive towards the resolution of those conflicts or deteriorate the situation if not used with good intentions. In fact, a regional cooperation could mean coordination of plans, actions, policies, solutions to possible problems and information sharing, therefore more stability as well (Goldwyn and Kalicki, 2013).

The emergence of a potential regional cooperation and of a new energy corridor would have effects on the EU as well. First of all, the European Union is very willing to cooperate with the countries of the Eastern Mediterranean when it comes to energy, mainly due to its proximity to the region (Ratner, 2016), a prospect that could

benefit the Union's integration and enlargement processes and its European Neighborhood Policy (ENP) as well, which means that the EU could play a critical role in the stabilization progress of the region. In this context, it is a given that the basic partners, Israel, Cyprus, Greece and Egypt would also need to cooperate closely with both the EU and NATO in order to achieve sub-regional stability.

Finally, the European model for energy markets could be benefited. In fact, in a case scenario where Greece was to also become a part of this cooperation and two member-states (Greece, Cyprus) were basic "partners" along with Israel, they could become strong supporters of the EU's two basic pillars, meaning diversification of energy sources and routes, therefore contribute to the energy security of the Union. The two member states would also have financial gains, especially Greece that is still under close European control due to the financial crisis, which has been troubling the country for almost a decade now, and better financial ambience for these two states would be beneficiary for the EU as a whole (COMM, 2014 and 2016).

3.2.8 Conclusion

Hydrocarbon reserves are mainly situated in specific locations around the world, therefore not all states have equal access to them. For the European Union, this has been an issue of concern since the early 20th century that also highlighted the need for more energy security. Until now, energy security is a highly important concern of the EU, due to its low primary production rates, especially regarding natural gas and oil that force the Union to rely almost entirely on imports in order to meet its internal demand. EU's high dependency rates make energy security one of the primary targets of the Union's energy policy agenda, along with sustainability, more integrated and competitive energy markets and limiting GHG (Greenhouse Gas) emissions.

Other factors that threaten the Union's energy security is the inadequate investments targeted to boost that sector, its high dependence on high-risk regions and most importantly its high dependency on Russia, especially currently with the ongoing conflict between Russia and Ukraine. Overall, the Union is looking to increase its energy security level and create a more unified energy policy, by taking actions that will assist to diversify its energy mix and energy supply sources, decrease

the internal energy demand, increase investments and the level of interconnection amongst its member-states through infrastructures and policies.

The biggest concern for the EU is Russia, which is the origin of the largest share of imported oil and natural gas. More precisely, there are member-states that are depending entirely on Russia for their energy imports, especially when it comes to natural gas. Concerns over Russia concentrate primarily on political matters, as the Union fears that Russia could use its energy monopoly as an influential instrument. Meanwhile, large investments have been made in order to adequately transfer Russian energy to Europe, making Russian energy very competitive in comparison to others and at the same time projections show that energy demand is not going to decline within the near future, therefore so is Russian dependence (COMM, 2014).

Some member-states are already enjoying some levels of agility in an energy cut-off scenario, but still widening their range of energy suppliers is not an easy task. EU's alternatives bring many problems to the table, each one of a different scale, severity and nature. Most popular alternatives are considered to be North Africa, Azerbaijan and Iran, the LNG imports that can benefit a lot the Union's diversification of energy sources target, as well as the potential of shale gas. Finally, one very aspiring alternative is the Eastern Mediterranean, due to the discoveries of large amounts of recoverable hydrocarbon reserves located in the EEZ of Israel and Cyprus. The opening up of this new energy corridor, even though it has to overcome many obstacles and despite the overall instability of the region, could potentially offer a big advantage to the EU, including a chance for further enlargement, more diversified and secure energy sources and offer to the Union the chance to increase its influence to that region.

Nevertheless, the EU is aware that at this point its focal point is the construction of the necessary infrastructure that would connect the member-states to more energy producers other than Russia and to that end many pipeline and LNG projects are being currently constructed and planned, such as the TANAP and TAP pipeline projects, the construction of new LNG terminals and the expansion of already existing ones, to name a few. More diversification away from Russia would also give the opportunity to the Union to support more Ukraine's vulnerable position, provide incentives to Russia to make more investments in order to improve its existing infrastructure and of course improve its overall energy security.

3.3 Greece

Summary

The last part of chapter three, is examining the case of Greece. Greece has long history, and a past of both success and failure, with regards to hydrocarbon reserves. First, a brief chronicle of all the actions that have taken place within the Greek territory in an effort to identify the Greek resources, is being presented, that will also help the readers understand many of the weaknesses and inefficiencies of the Greek state. Even so, however, there have been some few discoveries that are already being exploited and used by the Greek state, which also show that with further and more intense surveys the potentiality of finding more and worthy of exploitation reserves is still active. For that reason, the next part is dedicated to the analysis of the areas that have the most potential of holding large amounts of hydrocarbons and that are therefore applicable for further exploration. While studying the relative literature, it seemed necessary to include a part that would explain the situation over Greece's Exclusive Economic Zone and the conditions and restrictions that it creates or not, and also a brief examination of the law that surrounds the issue of hydrocarbon exploration and exploitation, as well as Greece's position over that matter with regards to the International Law.

A key research assumption with very high significance is the fact that despite all the obstacles and the economic crisis that has been in full swing during the last years in Greece, the Greek Natural Gas system is still evolving and attracting new investments and there is lively interest for more investments in the country that include projects that will further connect Greece to the rest of Europe and bring the goal of becoming an important energy transit hub one step closer. There are even indications that Greece could easily compete Turkey on that matter and become a more safe and stable solution for Europe. Of course, there are many weaknesses that Greece has to overcome and reforms that need to go through in order for Greece to become more welcoming towards those projects, however the overall environment seems positive.

3.3.1 Hydrocarbons' Exploration Chronicle

The Greek hydrocarbon exploratory program dates back to the 20th century, when the first exploratory drillings took place. Overall 175 exploratory drillings and approximately 75.000 km of seismic surveys were conducted in the Greek territory and marine area, most of them during the 70's decade and since 2010, a new rhetoric has begun regarding the potential of Greece's hydrocarbon exploration and exploitation field. Many discussions, deliberations and controversies have taken place, however still that field remains in its infancy and with very little tangible results.

The first drillings were conducted during 1903-1960 and were mostly targeting areas with superficial hydrocarbon appearances, at Zakynthos, Katakolo, Kyllini Baths and Epirus. Most drillings were shallow and indicated the existence of oil and gas, however without any commercial potential. During the second round, which took place from 1960 to 1974, large companies (BP, ESSO) undertook the venture of exploring areas of Western Greece, who due to the technological advancements of that period and using geological procedures, were able to conduct boreholes of larger depths, targeting at large surface anticlines (Aitoliko, Zakynthos, Paxoi, Astakos etc.), but without any discoveries (Nikolaou, 2012).

During the same period (1968-1974) other big companies (CONOCO, OCEANIC, CHEVRON, ANSHUTZ, and TEXACO) were also investigating marine areas located at the Aegean Sea, which resulted to the discovery of the Prinos and South Kavala reserves at Thracian Sea, by OCEANIC. These licenses after 1974 froze and afterwards they disappeared completely. What is interesting is that since then, Greece no longer exercises its right for exploration and production of hydrocarbons in the Aegean Sea (Tsaltas, Anagnwstou, 2014, p.99). Those discoveries were followed by the next exploratory period (1975-1998), when the state-owned Greek company DEP S.A. and later DEP EKY S.A. had the leading role. They conducted 74 drillings in total, which resulted to the discovery of three small deposits, one oil deposit at the marine area of Western Katakolo, one asphalt deposit at Zakynthos and one natural gas deposit at the area of Epanomi (Xalkidiki).

Based on those latest discoveries the first round of concessions begun (1995-2002), which included the assignment of four locations for the exploration and

exploitation of hydrocarbons at Western Greece. The TRITON Company was the one that undertook Aitoloakarnania, where it executed two drillings and seismic surveys and the Gulf of Patra, where it executed only seismic surveys before its complete withdrawal from the area. The areas of Epirus and the Northwestern Peloponnese were explored by the company ENTERPRISE that conducted seismic surveys and two drillings, which showed only indications of hydrocarbons. Furthermore, the company decided to abandon one drilling at Kalpaki (Epirus), due to technical problems and finally the company withdrew from the area as well. Despite the huge amounts invested in those surveys the results were not worthy of the expectations and the drillings did not even reach the depth originally agreed.

From then on and until very recently the Greek hydrocarbon exploration and exploitation program was characterized by inertia and stagnation, mostly due to the lack of political will and the dissolution of DEP EKY S.A., which used to function as a governmental agency with respect to that field. Only exception to that overall stagnation were the exploratory and production activities of the reserves that are still active and exploitable, namely Prinos, Southern Kavalla and Northern Prinos at the Thracian Sea.

Table 5.1 Hydrocarbon Surveys in Greece

Year	Company	Area	Drillings		Year	Company	Area	Drillings
1938-50	CHELIS W.	NW Peloponnese	10		1970-72	TEXACO	Gulf of Thermaikos	2
1938-40	DEILMAN	W.Thrace	-		1969-72	CHEVRON	Cyclades	-
1956-60	DEILMAN-HLIOS	W.Thrace	6		1969-71	C&K PETROLEUM	Corfu	-
1960-63	RAP	W.Thrace	4				Preveza	
1960-63	ESSO-HELLENIC	NW Peloponnese	9				Gulf of Amvrakikos	
		SW Peloponnese			1969-73	ADA OIL (CONOCO)	w. Greece	1
		Zakynthos					central Aegean Sea	
		Paxoi			1970-74	AN-CAR OIL	Zakynthos	2
1960-63	BP EXPLORATION	W.Greece	2				NW Peloponnese	
		Kefalonia			1971-74	ANSCHUTZ	Kassandra	2
		Leykada					Thessaloniki	
1960-62	HUNT	Thessaloniki	3				Gulf of Siggitikos	
1963-65	SAFOR	Rhodes	2		1973-77	SERES SHIPPING PETHAR	Kiparissiakos Gulf	-
1969-68	Ministry of Industry	Epirus	Total: 17				Pilos	
	IGME	Grevena			1975-95	Hellenic Petroleum		74
	IFP	Thessaly			1981-82	AGIR	Paxoi	1
		Thessaloniki			1996-2001	ENTERPRICE OIL	NW Peloponnese	2
1970	OCEANIC	Thracian Sea			1996-2001	TRITON Ltd	Aitoloakarnania	2
							W.Patraikos Gulf	

Source: Lalehos N. (1993), Nikolaou K.A (2013) Workshop, ypeka.gr

IGME: Institute of Geology and Mineral Exploration, IFP: Institute Français du Petrol

3.3.2 Hydrocarbon Discoveries

Despite the lukewarm approach to the exploratory program by the State of Greece and the inefficient results, some explorations were fruitful and led to the identification of some deposits worthy of exploitation.

- The **Prinos** oil deposit at the Thracian Sea, whose production has reached 116 bb until today.
- The **South Kavala** deposit, whose production has reached 855 bcm of natural gas.
- The **Northern Prinos** oil deposit, with a production of approximately 3.5 bb.
- The **Epsilon** deposit, with a production of 350.000 barrels, which was interrupted due to technical problems. In the same area, there were more discoveries, the deposits of **Eastern Thasos**, **Athos** and **Ammodis**.

Along with the previous discoveries of the oil deposit at Western Katakolo, the asphalt deposit at Zakynthos and the natural gas deposit at Epanomi (Thessaloniki), the overall discoveries in Greece amount for 10 million, four of which came into operation.

Experts on the field support that the potential for more exploitable discoveries in Greece is indeed positive. Their estimates are mostly based on the already confirmed oil systems in the Alpine and Post-Alpine sedimentary basins of Western Greece and the tertiary basins of Eastern Greece, where parent hydrocarbon rocks, reservoir rocks, cover rocks and suitable traps coexist and the proper geological history is there as well, therefore all those conditions that are required for the existence of deposits (Nikolaou, 2012). The active hydrocarbon indications on the surface and in boreholes and the discoveries of hydrocarbon fields in the Eastern and Western Greece, confirm the existence of active petroleum systems and advocate to the possibilities of more hydrocarbon fields in the Greek subsoil. Furthermore, the similarity with the discovered petroleum systems in Italy, Croatia, Albania and

Eastern Thrace reinforce the view that Greece has valid potential of finding oil deposits.

Figure 5.1 Greece's Sedimentary Basins-Hydrocarbon Occurrences and Infrastructures

Source: Nikolaou K., (2012)

3.3.3 Areas with the highest potential

There are some areas that according to the experts show higher potential of actually finding recoverable reserves. One of the most debated areas is Southern and Western Crete marine area. Some cycles support that there are already findings of hydrocarbons in the area, however those do not correspond to the reality and since the necessary exploration procedures have not taken place yet, it is not possible to prove those claims.

In fact, with respect to that area, there are few primary and trustworthy research evidence and more geophysical surveys are required, which will provide more evidence regarding the thickness and quality of the sediments, the type of the tectonic deformation and the size of the potential targets, critical data for their future exploitability. Further, the Mediterranean Ridge, a geological unity that prevails to a great extent to the Western, Southern and Eastern area of Crete, has different characteristics if compared with the Levantine area, where Israel and Cyprus made

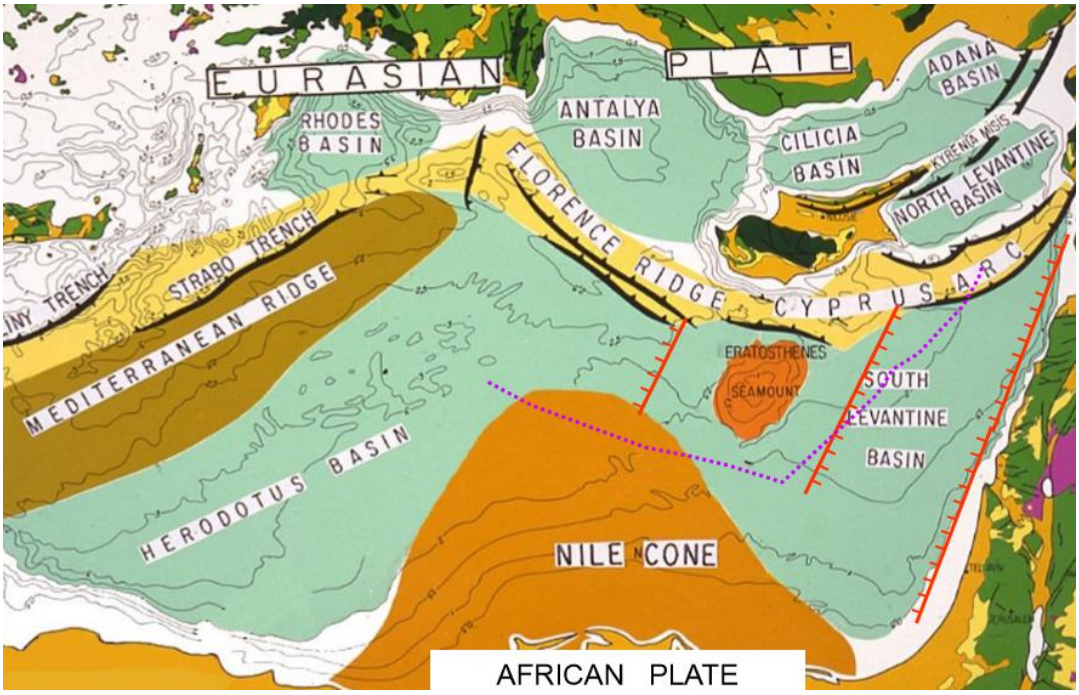
their recent great discoveries, therefore it is too early to speak of reserves in the area without the necessary data (Tsaltas, Anagnostou, 2014).

However, more than 3000 km. routes of multibeam bathymetric high-resolution scanning and the latest geophysical surveys showcase that the area is indeed of high interest. In general, mud volcanoes and hydrates are the means of escaping and releasing of hydrocarbon gasses to the surface of the seabed from deeper sources, both present elements to the wider area (Tsaltas, Anagnwstou, ed/s, 2014, p. 29). The Mediterranean Ridge is characterized by the mud volcanoes located on it, the Greek arc and the basins that are formed between the arc and the MR and the foreland basins that are created to the front of the MR (Tsaltas, Anagnwstou, ed/s, 2014, p.107).

The area is considered as particularly interesting since it is characterized by mud diapirism and the experts have identified two separate locations with different allocation styles, 1) one zone southwest of Peloponnese, where mud diapirs are being developed in lines (e.g. Prometheus) whose length extents to 200 km. and 2) an area between Crete and the Cape of Cyrenaica, where circular mud volcanoes are located, mud plateaus and mud elations of different sizes and orientations (Tsaltas, Anagnwstou, ed/s, 2014, p.122).

More specifically, there are three areas with high potentiality of discovering hydrocarbons. The Area A, which is characterized by the small width of the Mediterranean Ridge and in combination with the Greek arc, two large anticlines are being created there. This fact along with the absence of Triassic evaporates, leads the experts to the conclusion that these two large anticlines could potentially become two large hydrocarbon fields with a petroleum trend. In the same area, where the Tainaro basin is developed (backstop basin) in the south of the Messinian Gulf and west of Cythera, where the thick clastic Miocene to Pleistocene sediments in combination with the Messinian plasters, could actually provide important hydrocarbon gas deposits. Again in that area and on the Mediterranean Ridge, mud volcanoes were identified, which were created by the escaping of hydrocarbon gasses and which could be important hydrocarbon fields as well. Consequently, more geophysical surveys are required for this area that will determine the geometry of the basins and the structures that are affecting those areas.

Figure 5.2 East Mediterranean Basins



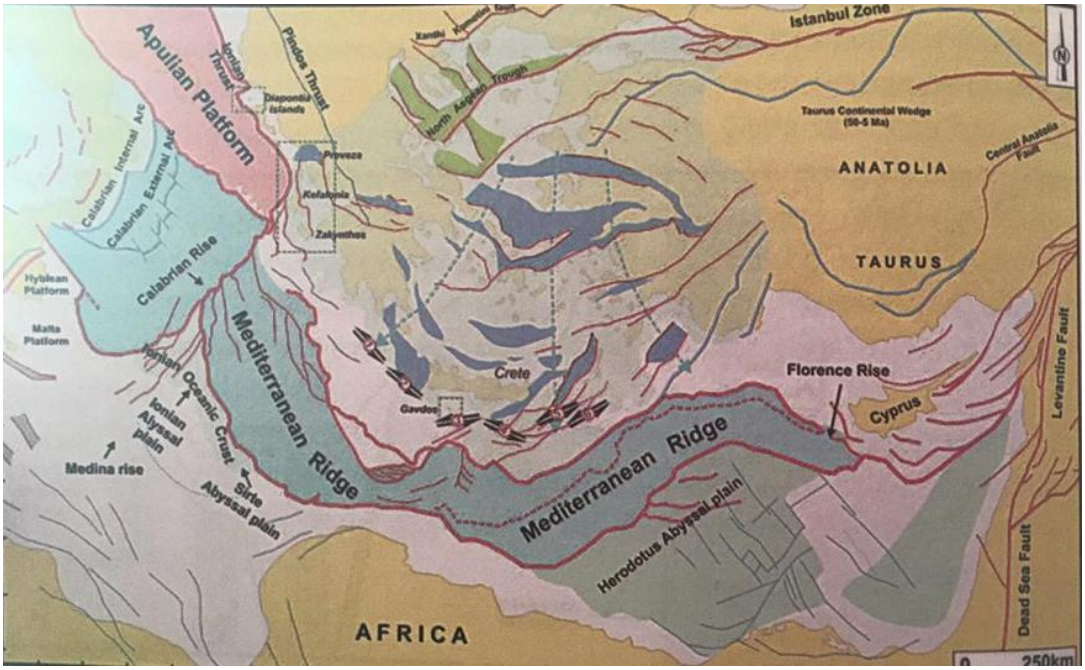
Source: Nikolaou K.A. (2014)

The Area B, is characterized by the vast width of the Mediterranean Ridge, on which the largest scope of mud volcanoes is being developed. Between the MR and the south margin of Crete, 5 basins (backstop basins) were created, all of great extent and large thickness of Miocene and Plio-Pleistocene age sediments, which again, in combination with the Messinian plasters in the stratigraphic column, could give important deposits of hydrocarbon gasses.

The Area C, is referring to two particularly interesting positions, each of different dynamic. The first position, refers to the mountains of Anaximander, where volumes of hydrates are located and the second position, refers to the Herodotus basin. Based on the discovery of hydrates in Eastern Mediterranean during the 1996-1999 exploratory program, in 2001 IGME proposed to the EU the "Anaximander" program for the exploration and assessment of the hydrates located at the Subsea Mountains of Anaximander and the study of the accompanied biosphere of the Eastern Mediterranean. This study showed high hydrates' content within the sediments of the bottom and its main targets were the mud volcanoes of "Amsterdam", "Kula" and "Kazan". The research showed the existence of more mud volcanoes in the area, two of which "Athens" and "Thessaloniki" were also investigated in detail. The overall results showed for the first time that the area of the Anaximander's subsea ridges is a

field of extensive hydrates presence. The Herodotus basin, which is located within the Greek Exclusive Economic Zone, shows great dynamic, with much potential of stratigraphic traps accompanied by potentially neighboring existence of active parent hydrocarbon generation systems. There, the TGS company, has already conducted some reliable, however rare seismic surveys. The interesting factor regarding the area, stems from the hydrocarbon findings to its south, namely the Nile Delta, which is considered to be an extension of the Herodotus basin, which means that the latter could potentially be a very promising area as far as petroleum is concerned. Also, geological cuts by the BEICIP/Franlab indicate thick sediment layers of Pleistocene and large thickness of Messinian evaporates. Finally, the fact that many tectonic and stratigraphic traps exist in the Herodotus basin that mark the existence of hydrocarbons, show how essential is for the Greek state to extend its interest towards the area. It is therefore very essential for Greece, to buy the geophysical lines that TGS-NOPEC has already conducted, in order to confirm the possible existence of targets of natural gas deposits.

Figure 5.3 The position of the MR and the structural elements affecting it

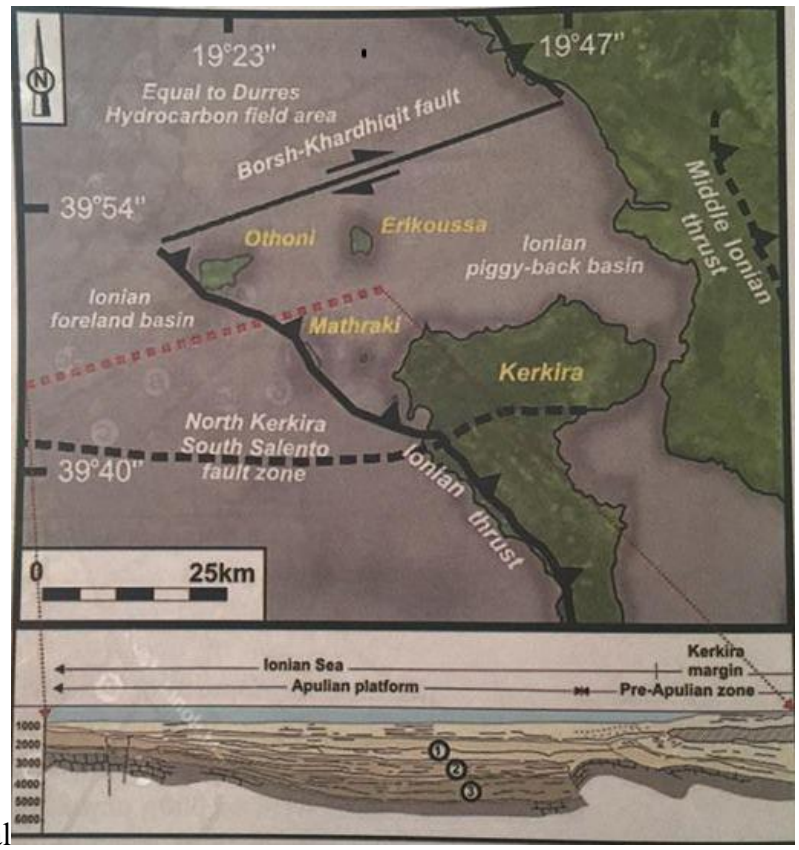


Source: Tsaltas G., Anagnwstou C. (eds., 2014), Aigaio kai Notioanatoliki Mesogeios, p. 124

Another area with high expectations is the North Ionian Sea, which is the south extension of the Adriatic platform and is characterized by the presence of the Apulian platform and the Miocene foreland basins of the Ionian thrust. In this North section the Apulian Platform has already been studied in Italy and Albania, where significant liquid and gas hydrocarbon deposits were located, which are also connected with the stratigraphic sequence of the Mesozoic and the stratigraphic sequence of the Miocene and the Pliocene (Tsaltas, Anagnwstou, ed/s, 2014 , p. 108). Both Italy and Albania already draw large amounts of hydrocarbons from the area. Also, the existing discoveries of productive reserves in the Italian Adriatic platform, along with its proportionate quality to the Greek Adriatic zone, indicate that area's potential. Further, the already conducted seismic surveys in the area indicate the existence of some large targets in the deep waters, off the coast of Corfu and Lefkada. Overall, the areas with the highest potentiality petroleum-wise are 1) the area on the north of the Borsh Khardhiqit fault, 2) the area in the western Ionian thrust, the Ionian foreland basin and 3) last area is the piggy-back basin, which extends to the east Ionian thrust (Tsaltas, Anagnwstou, ed/s, 2014, p.116).

Figure 5.4 North Ionian Sea Oil

Potential



Source: Tsaltas G., Anagnwstou C. (eds., 2014), Aigaio kai Notioanatoliki Mesogeios, p. 116

The Central Ionian Sea is another interesting location. It is a separate geological province, strongly influenced by the peculiar, neotectonic, diapiric movements of the Triassic's evaporates. An ideal proportionate throughout the region is the discovered deposit of W. Katakolo, which confirms the existence of an active petroleum system in the area. Further, the Gulf of Patra and the Messinian Gulf are included in this very promising area as well. Both North Ionian Sea and Central Ionian Sea, along with the Southern and Western marine area of Crete are areas granted for seismic surveys of non-exclusive use.

Furthermore, the "fluid leakage from the bottom" is a general term that describes the wide range of fluids that escape from the bottom to the water column. In 1980 Newton et al. discovered for the first time in Greece the presence of gas escape craters at the island of Thasos. In 1996, Hasiotis et al. ascertained a crater field at the Gulf of Patra, the biggest yet within the Greek space (Tsaltas, Anagnwstou, ed/s, 2014, p.51), which consists of 72 craters and it extends in an area of 2.5 km² and later on (2006), Etiope et al. proved that the leakages of gas from the bottom at the port of Katakolo, were actually leakages of thermogenic methane. The difficulty when it comes to the collection and the analysis of the data with regards to that specific area however, has provided us with very few information as far as the composition as well as the flow rate of those leakages, therefore once again, further investigation of that very promising area is required in order to acquire more specific results. On the contrary to the area of Katakolo, the activations of the field of the Gulf of Patra are two of the most studied activations worldwide and are associated with earthquake events.

Another part of the Ionian zone, the area of Ioannina, is another promising location. In fact, in its northern extension in the neighboring Albania, there are already discoveries of several oilfields and since the geological formations do not stop where states' borders begin, but tend to continue on, the possibility of more discoveries on the Greek territory is high. Most of the targets, where in the Albanian side there have been major discoveries, were not a part of the ENTERPRISE exploration cycle, but the Albanian discoveries (e.g. Patos-Marinza oil field, 5 bb)

(Nikolaou, 2012, energypress.gr) showcase the significant oil amounts in the Ionian zone, thus its extremely large potential. Notably, though, despite its high petroleum potentiality, the area is also very complicated and difficult to explore, due to its geology and terrain. The area of Ioannina is also included in the currently running "open door" procedure (Nikolaou, 2012).

Along with Ioannina, the Western Katakolo deposit is also included in the "open door" contest. This deposit was discovered by the state-owned company DEP S.A. in 1981-82 and it is located 3.5 km. on the southwest of the Katakolo Cape, in 200-300 m. depth. The production tests that were conducted, showed a daily production potential of 20-22 mcf of natural gas and 1500 barrels of oil. According to the Greek Ministry's (YPEKA) announcement, we are to expect 3 bb of recoverable oil from the deposit, however this assessment is also considered to be very conservative. The exploitation plan of the W. Katakolo deposit is expected to be done by drilling laterally from the Cape region, in order to overcome any environmental issues, due to the high tourist flows of that area.

Another "open door" area, is the Gulf of Patra, an area which was investigated with seismic surveys by DEP and later by TRITON OIL, which located a series of targets. However, due to the very low oil prices of that period, the company decided to leave the area and abandon its exploration plan. Even so, the oil potential of that location is particularly high and could be even higher if combined with the corresponding adjacent area of the deposit of W. Katakolo. For that area, the Greek Ministry's estimation ranges to 250-300 million barrels of recoverable oil.

3.3.4 Greece's Exclusive Economic Zone

Ever since the conversation regarding the exploitation of the Greek hydrocarbon reserves started a few years ago and with pretext the three agreements between interested states of the South-Eastern Mediterranean, namely Egypt, Cyprus, Lebanon and Israel, for the delimitation of their adjacent or opposite marine areas that define their maritime borders, there has been a lot of discussion related to the possibility of Greece joining this transnational arrangement. Adjoining within the same area are also Turkey, Syria, Greece and Libya, who has indirect interests in the area, due to its opposite to Greece's coasts at the South of Crete. Generally, clearly

determining the limits of national jurisdiction zones of each state is for the international community a vital complementary element for ensuring those necessary data, which can significantly assist towards the establishment of world peace by avoiding bilateral frictions (Tsaltas, 2009, p.119).

Normally, those seven states as the primary states of the region, would be joining deliberations, aiming at a comprehensive settlement of the delimitation of the undersea area, which according to the International Law of the Sea it relates to the exploration and exploitation of the natural resources, in order to also avoid the violation of the related rules that could arise either by disputes or isolated acts. However, this is not the case as far as the Eastern Mediterranean is concerned, mainly due to the intransigent attitude of certain states within the region. This attitude resulted from the above-mentioned agreements, first of which was the agreement between Cyprus and Egypt regarding the delimitation of their Exclusive Economic Zone (un.org, 2003). Here it should be noted that out of those seven states, two, namely Turkey and Israel have voted against the UNCLOS of 1982, however both of them along with the rest of the states that surround the Mediterranean have their own territorial waters that extend to 12 n.m., apart from Greece, which is the only country within the region that maintains the minimum territorial waters on an international level, that of 6 n.m. (Tsaltas, 2012).

Furthermore, almost all Mediterranean states have shown interest in developing cooperation policies, within the framework of neighborly relations, consequently only a few marine areas remain without a delimitation arrangement. Only exception remains the constant denial from the Turkish side to accept the regulations of the International Law of the Sea, selectively in respect to the delimitation of the continental shelf of the Aegean Sea, including its geographic expansion to the South-Eastern Mediterranean, due to the presence of the Greek island complex of Kastelorizo and Strogili. A conflict that still continues since 1973 as a part of a wider range of Turkish claims to the detriment of Greece's sovereign rights in the Aegean Sea, with ultimate goal the complete overthrow of the status quo in the area (Tsaltas, 1996, pp 121-140), an attitude that has also an impact to the delimitation of the Exclusive Economic Zone.

The United Nations Convention on the Law of the Sea (UNCLOS 1982), defines the EEZ as an area beyond and adjacent to the territorial sea, within which the

coastal State's sovereign rights and jurisdiction are limited. States in order to acquire an EEZ they must proclaim it, it cannot extend beyond 200 nautical miles from the baselines and it applies to the seabed, the subsoil and the waters superjacent to the seabed, as well as the exploitation of their resources. Following and applying the rules of the UNCLOS could as well lead to a safe and fair delimitation of both the continental shelf and the EEZ, by respecting all the geographical particularities of the area, including Turkey's disadvantaged position (article 70, UNCLOS 1982) as well as the fact that all insular territories are eligible to receive all national maritime jurisdiction zones (article 121, par. 2, UNCLOS 1982).

Under any circumstances, what must become perfectly clear is that the non-proclamation of an EEZ by Greece does not limit the state's sovereign rights regarding its submarine area (seabed and subsoil), as those are fully enshrined by the continental shelf regime (Tsaltas, 2011). The proclamation of the EEZ extends the state's rights to the bottom's overlying water column. Further, states do not have to declare their continental shelf, because it is their hereditary right and their sovereign rights apply to that zone "ab initio" and "ipso facto" and it can be potentially extended to 350 nautical miles, thus going beyond the EEZ. Therefore, the Greek attention should be oriented to the resolution of the continental shelf disagreement with Turkey, especially since there is a high possibility that our reserves extend beyond the 6 nm range, thus it would be illegal for Greece to make any moves. For instance, for the licensing competitions that have begun during the last years in Western Greece, at areas adjacent to Albania and Italy and in the South of Crete at areas adjacent to Egypt and Libya, set square was the median line, which was "de facto" accepted by the neighboring countries (Filis, 2014). Therefore, the median line and most importantly, the continental shelf is all that Greece needs in order to reclaim its mineral resources.

Nevertheless, the way the rules of the International Law of the Sea have been shaped are particularly positive for Greece. Firstly, because they allow the extension of its jurisdiction to almost all the activities and uses of the sea in a wide sea area and secondly, because they recognize the right to an EEZ for all islands that are able to support human life and have their own economic life. Furthermore, for the Aegean Sea specifically, by adopting an EEZ Greece will consolidate its presence to that sensitive area and will ensure the political and economic unity of its insular space

(Strati, 2015, pp. 144-45). Although the declaration of an EEZ is not necessary for the exploitation of hydrocarbons, for the exploitation of renewable energy sources, such as the wind power and the wave power, it is mandatory when it comes to areas outside the territorial waters (Strati, 2015, pp.147-48).

So far, Greece has signed an agreement for the delimitation of its continental shelf with Italy (1977) and in 2009 Greece signed a similar agreement with Albania, which unfortunately its entry into force is still pending (Valinakis, 2012). In 2009 Greece also entered into a negotiation cycle with Egypt, Libya, Albania and Italy with regards to the delimitation of its EEZ, but without any positive results so far. However, the Greek government on February 20, 2013 proceeded to a verbal note to the United Nations (protothema.gr, 2013), declaring that "Greece exercises ab initio and ipso facto its sovereign right to exploit the underwater wealth of its continental shelf, as defined by the International Law of the Sea"(defence-point.gr, 2013).

The verbal note came as a response to inquiries in the Eastern Aegean Sea, within the Greek continental shelf from the Turkish TPAO and was mainly targeting the denunciation and the rejection of the Turkish claims, whilst by many was considered as an indirect EEZ proclamation. In continuation to the verbal note, the Greek government by taking advantage of the circumstances, meaning the political difficulties that its southern neighbors were facing at the moment (Egypt, Libya), seized the opportunity in order to exert its sovereign rights. The Ministry of Environment, Energy and Climate Change through an announcement on August 4, 2014 for the 2nd International Round of concessions (Official Journal of the E.U., 2014), declared de facto continental shelf and the tangent to it EEZ at the south of Crete, while publishing all the relevant maps and coordinates, thus indicating that Greece is becoming more active and serious with regard to that matter.

3.3.5 Hydrocarbons' Exploration and Exploitation - The Greek Law in force

The right for exploration and exploitation of hydrocarbons located on-shore, undersea or under-lakes, where the Greek Republic exercises sovereignty or sovereign rights, according to the provisions of the UNCLOS (1982) (as ratified by the law 2321/1995), belongs exclusively to the Greek State. The management of those rights on behalf of the Greek State is exercised by the Hellenic Hydrocarbon Resources

Management S.A., established by the law 4001/2011, which adjusted the Greek legislation to the Third Energy Package of the EU, for the liberation of competition within the energy field towards a more integrated model. The main objective of this institution is to manage the Greek State's exclusive rights to the exploration, research and exploitation of hydrocarbons with transparency, flexibility and in accordance with the applicable European legislation (Kelemenis & Zwgopoulou, 2015, p. 290).

With regards to the procedures followed for the conclusion of contracts between the HHRM, on behalf of the Greek State, and third parties, are compiled by the following procedures (law 2289/1995):

1. After the proclamation of the Greek areas that are intended and made available for the exercise of the exploration and exploitation rights, which are divided by the Minister of the Environment, Energy and Climate Change. The invitation is being approved by the Minister, is being published by the Government Gazette and is also being send to the Official Journal of the European Union for publication.

2. Following a request from an interested party regarding an area that is not included in the proclamation. After the request is accepted, the HHRM issues an invitation that has to be approved by the Minister, published in the Government Gazette and send to the Official Journal of the EU for publication. There is a deadline for submission from other interested parties as well, which cannot last less than 90 days.

3. Through the Open-Door Procedure, which applies when the area in question is permanently available for the interested parties to show their interest or it has previously been available, but did not end up in the signing of a contract or was abandoned by the previous contractor. The Minister issues a notice, which is being published in the Government Gazette and being send to the Official Journal of the EU for publication. The interested parties can submit their bids for more than one areas, which are then being excluded by the Open-Door Procedure and enter the concession process.

The invitation has to necessarily include the area under claim, the terms and obligations of the licensee, the selection criteria, the amount of the payable fee, the guarantee execution of the bank, which has to legally operate in the EU member-states, as well as the deadline of the authorization (Zolwtas, 2015, p.241). The procedure is completed when the HHRM grants the right for exploration, which can

be granted to more than one applicants for the same area. In continuation, the licensee is obliged to submit the exploration plan that is to be followed in phases to the HHRM S.A. and after the completion of each of those phases, the submission of the acquired data is also necessary.

Then, the conventional forms already shaped by the international practice are being followed and which have already been discussed, namely, the concession agreements, the production sharing contracts and the service contracts. The most preferred type of contract by the Greek State is the lease contract, which falls to the wider family of the concession agreements and is one of the two agreements provided by the Greek legislation (art.2, prg. 10, law 2289/1995). The second type of contract provided by the Greek Law is the production distribution contract, which follows the standard of the production sharing contracts. However, the Greek legislation does not include a provision for the service contracts, which are generally associated with the undertaking of higher risks by the State. The exploration and exploitation of hydrocarbons can be conducted conventionally by either a physical or a legal party, alone, in collaboration with others or in collaboration with the State, in the context of a joint venture. This kind of partnerships are particularly widespread internationally, mainly because of the risk sharing quality that they offer.

The lease contract is an administrative contract, since it fulfills the requirements of the related legislation, namely, a) conclusion with an administrative public body, b) the object of the contract serves a public purpose, c) the compilation and execution of the contract shall be governed, at least partially, by rules of the administrative law and the contract shall include conditions, according to which the administrative public body is allowed to intervene unilaterally in the contractual relationship and therefore enjoy a special contractual status. Consequently, any differences that might arise during the execution of the contracts are within the competence of the Administrative Court of Appeal. Of course, the classification of the concession contracts as administrative does not negate their private economic orientation and private juridical nature of their content. For that reason, the law provides that in case of contractual differences, there is the possibility that they apply to the jurisdiction of the commercial arbitration court (art.10, prg. 13) (Kosmidis, 2015, p.257). Finally, as Zolwtas T. concludes, the concession agreements for the exploration and exploitation of hydrocarbons' rights cannot be considered as

exclusively administrative and that they fall exclusively to the Administrative Court of Athens. Every case needs to be studied separately and according to the conditions of each invitation and each contract separately (Zolwtas, 2015, p.319).

3.3.6 Natural Gas – Legal Framework, Management and Distribution

The decision for the inclusion of natural gas in the Greek energy balance was made in 1987. Main reason was the need to limit the country's economic dependence on oil, to safeguard the environment, the modernization and the strengthening of the Greek economy's competitiveness and to date, Greece has signed multiple transnational supply and cooperation agreements related to that field.

The Greek natural gas market was initially organized by the law 3428/2005, which transferred the European Directive 2003/55/EC, regarding the common rules for the internal natural gas market and the abandonment of the 98/30/EC Directive, to the Greek legislation (Dagoumas, 2012, p.227). In 2007 and after the completion of the legal separation of the Public Gas Company's (DEPA) transporting and trading activities for the liberation of the natural gas market, the Administrator of the National Natural Gas System was established, under the brand name "Administrator of the National Natural Gas System S.A." (NNGS S.A.), which is 100% DEPA's subsidiary. Main scope of NNGS S.A. is a) to operate, maintain and develop the national natural gas system and its interconnections, b) to study and implement the pricing policy as well as the transporting procedures for the users of the system, c) to provide access to the national natural gas system for every user, who wishes to develop a marketing activity or direct supply of natural gas for own use.

The Greek natural gas imports are undertaken by the Greek Public Gas Company DEPA, which was founded in 1988 and in whose share capital Hellenic Petroleum (HELPE) participates by 35% and the Greek Public by 65%. DEPA has the right to buy, import, export, transport, store, process and add odorous substances, sell, distribute and in general trade the natural gas (Fortsakis, 2009, p.81). Overall, DEPA preserves the right to sell natural gas to the distribution companies and gas supply companies, to big consumers, including vehicular traffic. In 1995, DEPA founded the gas distribution companies (EDA) for Attica, Thessaloniki and Thessaly and in 2000-

01 the respective gas supply companies (EPA). Later, in 2007 the gas distribution company for Attica absorbed the EDA Thessaloniki and the EDA Thessaly and was renamed to EDA S.A. Recently and due to the secession of the distribution sector decided by DEPA's General Assembly, a new subsidiary was founded, the EDA for the rest of Greece, which will include the new distribution networks to be built in the future in urban areas such as Levadia, Thebes, Lamia, Chalkida etc. The new company will be fully separated from DEPA, functionally and administratively, in accordance to the provisions of the 3rd EU Energy Package (worldenergynews.gr, 2016).

Today, there are three EPAs in operation, in Attica (Attiki Gas B.V., the subsidiary of Shell gas B.V.) and in Thessaloniki and Thessaly, where the Italian Eni is also participating. DEPA owns 100% of the distribution network of all those areas and has 51% share in the EPAs. Main scope of these companies is the expansion, operation and maintenance of the "city networks" and the distribution of natural gas to residential, commercial and industrial consumers in the geographical area laid down in the License of each EPA (depa.gr).

Figure 5.5 Natural Gas National Transport System

Source: http://www.opengov.gr/minenv/?p=4203

In a similar manner to the electricity market, the natural gas market is being gradually liberalized, starting with some selected clients, who preserve the right to the selection of their distributor. In terms of pricing, apart from its purchase cost by DEPA, there is also the annual fixed distribution margin, therefore the final price for the consumers, results from the sum of those two. The monthly price alternations are due to the different purchase cost by DEPA, which depends on several factors, such as the international oil prices, euro's exchange rate to dollar, the Greek inflation rate, the US inflation rate etc. The European and the Greek natural gas imports policy, via overland or underwater pipelines, is governed by long-term delivery contracts, linked to the international oil prices. Consequently, the analysis of the natural gas market in Greece until now was also linked to the development of specific indicators of petroleum products. However, during the last years and due to the fast penetration of LNG, the role of the instant delivery (spot trading) markets has strengthened and recent studies in Europe show that natural gas markets are moving to more independent models. That means that the configuration of natural gas prices will be based on the instant delivery natural gas prices and not based exclusively on oil prices (Dagoumas, 2012, p.231).

3.3.7 Greece's role as an Energy Transit Hub

Currently, Greece is facing a great opportunity that cannot be left unexploited. The opportunity that is opening for the country's future is to become an energy transit hub. Especially after the change in plans with respect to the South Stream project, Greece can provide multiple alternative solutions and play a leading role to the implementation of the EU's target for energy security, by promoting investments in the energy infrastructures field and by diversifying and expanding the entry points, as well as the export routes through the promotion of cross-border projects with the countries of the region. Greece has already developed a dynamic energy policy in the natural gas sector in an effort to become key transit hub for EU's energy imports from South Russia, the Caspian Sea and Central Asia as well as from the Eastern Mediterranean.

The Eastern Mediterranean in particular provides a new extremely positive prospect for Greece and the overall region as well. The recent hydrocarbon discoveries create new circumstances, due to which the states of the region are facing a great opportunity to set all their differences aside and instead create a long-term stable and attractive investment environment, under which everyone can benefit in their fair share. Vital prerequisite would be the gradual normalization of their relations, the arrangement of the gray points (e.g. delimitation of EEZ), then develop common denominators and investigate their alternative supply options along with the consuming states (Filis, 2012, p.435). After the creation of a stable and safe environment, Eastern Mediterranean could provide a very valuable supplementary solution to the energy "thirsty", especially for natural gas, Europe, a supplier that would provide safety and at the same time would ensure EU's diversification of suppliers.

Greece's geostrategic position, which links the East to the West, offers the appropriate circumstances for Greece to become a natural gas transit hub for Europe. Through pipelines and LNG units, natural gas can be transferred to the Balkans and to Central Europe, originated by the Caspian Sea, Central Asia and later Eastern Mediterranean. Further, Greece very early on adopted the strategy that demonstrates LNG as a viable alternative energy source for Europe, which has also reinforced the geopolitical profile of the state. EU's need to limit its energy dependence on Russia, provides to Greece the opportunity, along with the rest countries of the region to promote alternative options for the Union. However, in order to accomplish that, the countries in cooperation will have to set a long-term strategy, showcasing the investments of strategic importance, such as the gas inter-connectors, the construction of LNG terminals and natural gas storage facilities. This is also a proof that Greece is far from being a single observant in the energy market as, despite its small size and population, its natural resources are rich and so is its geographical position (Nikolaou, 2014).

Already existing facilities, the LNG terminal in Revithousa, which is now being upgraded in order to be able to receive larger quantities, the inter-connector pipeline between Greece and Turkey as well as the reverse flow pipeline Greece-Bulgaria in Sidirokastro, facilitate the channeling of quantities from Greece to the Balkans and then to Central Europe through alternative routes. There is also a number

of investment projects that will further empower Greece to become a pillar of energy stability for the Union (COMM, 2014).

Firstly, the priority corridors for electricity:

- NSI East Electricity, electricity interconnectors North-South in the Central-Eastern and South-Eastern Europe
- Euro-Asia Interconnector, electricity interconnection of Israel-Cyprus-Greece, between Hadera (Israel) and Attica (Greece)
- Interconnection between Maritsa East 1 (Bulgaria) and Nea Santa (Greece)
- Hydro-pumped storage, Amfilohia (Greece)

Secondly, the corridors and priority projects relating to natural gas:

- NSI East gas, gas North-South interconnectors in Central-Eastern and South-Eastern Europe
- IGB, Greece-Bulgaria interconnecting pipeline , Komotini and Stara Zagora
- FSRU, the floating storage and regasification unit in Alexandroupoli
- Permanent reverse flow terminal in the Greek-Bulgarian borders, Sidirokastro-Kula
- Kavala's storage unit

Southern gas corridor projects:

- TAP pipeline
- ITGI pipeline
- East-Med pipeline, a pipeline from the offshore area of Cyprus to the Greek inland via Crete
- Gas compression terminal in Kipoi (Evros)

The Trans-Anatolian Pipeline (TAP) is considered to be the cornerstone of the South Natural Gas Corridor's realization and is opening up new prospects for the European energy security. TAP will start in Greece, cross Albania and end up at the coast of South Italy, allowing the direct flow of Caspian gas to the European markets. The pipeline will start to the Greek-Turkish borders (Kipoi, Evros), where it will connect to the Trans-Anatolian Gas pipeline (TANAP) from Azerbaijan to Turkey

and end up to the Greek-Albanian borders (Kastoria). TANAP will be linked to the South Caucasus Pipeline Expansion (SCPX), which will be supplied with natural gas by the Shah Deniz II gas deposit. The undersea section of the pipeline will begin near the Albanian city Fier, cross the Adriatic Sea and connect to the Italian natural gas system in South Italy. TAP is projected to transfer 10 bcm/year through a dedicated pipeline, with a potential gradual increase to 20 bcm/year.

The ITGI project was put aside after the selection of TAP, however the Greek-Italian part of the project (IGI-Poseidon) still remains a priority and the IGB (Greece-Bulgaria) pipeline, is another project that will highlight Greece's role in the European energy scene. Its overall length will reach at 180 km, with a capacity of 5 bcm and a reverse flow and will link the Greek natural gas system to the Bulgarian. The construction of new LNG facilities in Greece has been a core pillar of the future role Greece is pursuing and has been studied under specific criteria and plans. Moreover, after the withdrawal of the floating storage and regasification terminal at the Gulf of Kavala project from the PCI catalogue, the construction of a floating LNG terminal at the south-east of the port of Alexandroupoli, a project sponsored by the Gastrade Company and DEPA, has clearly become a priority for DEPA and Greece. Its target will be to import gas and its storage capacity is estimated to 135-145 thousand cubic meters of LNG (Sofianos & Stampolis, 2010).

Another very important project is the East-Med pipeline, which will greatly enhance the diversification of the natural gas sources outside the traditional ones, as it will transfer natural gas from the Eastern Mediterranean reserves to the rest of the EU, through interconnecting pipelines (IGI, IGB). In fact, the pre-feasibility study delivered very positive results and the results of the feasibility study were also positive. According to current timetables and if the available quantities allow it, its operation is expected to start in 2021. The pipeline will consist of underwater parts starting from the deposits to Cyprus and then from Cyprus through Crete to the Peloponnese (Sofianos & Stampolis, 2010). The total length of the pipeline will be about 1200 km and the onshore sections from the Peloponnese to the mainland will have a length of about 480km. East-Med is definitely a strategic advantage for the EU, since it will go only through European member states, therefore it will serve the EU's interests to the full, while according to already conducted studies, the project is technically feasible and economically viable (COMM, 2014).

Based on the above it is obvious that through the materialization of the above-mentioned infrastructures, Greece is a state that can provide multiple entry and exit points and basically convert itself to a natural gas transit hub, as it concentrates gas quantities from many different sources (Central Asia, Russia, North Africa, Eastern Mediterranean). After the construction of the TAP pipeline and its full utilization (20 bcm after 2020), in conjunction with the interconnecting pipelines (IGB, IGI), Greece's exporting capacity in gas transport to the Balkans and from there to Europe can reach to 28 bcm. Furthermore, in case the plans between Russia and Turkey for the construction of the new South Stream (Turkish Stream), which will go through Turkey and complete its route at the Turkish-Greek borders (Kipoi, Evros), are to take place, then a new pipeline of 16 bcm capacity will have to be constructed in Greece. In this case the ITGI pipeline will technically be revived, increasing Greece's total export capacity to 44.5 bcm (Sofianos & Stampolis, 2015, p.16).

3.3.8 Investments' Protection and Internal Systematic Weaknesses

The internal –domestic- law of the host country is in general the law that applies for foreign investments. The domestic law consists of law provisions of increased formal power (Constitution), which concern the protection of investments in general and to specific legislative provisions that concern mostly the foreign investments or specifically investments in the hydrocarbons sector (Glavinis, 2009).

One of the most important provisions of the Greek Constitution is the right to private property (art. 17). Therefore, foreigners that hold property in Greece can enjoy all the rights related to their property the same way that applies for the Greek citizens. Foreign investments are protected at a constitutional level against the political risk of illegal expropriation. The most specific constitutional protection for foreign investments is enshrined by the article 107 of the Constitution, which refers to the special provisions of the law 2687/1953 on "investment and protection of foreign capital". This law integrates provisions for the protection of foreign investments from political risks, such as the ban of expropriation and requisition without the payment of the adequate compensation, the principle of national and most-favored treatment, the re-export and return of the investment capital and of the profits, the provision for recourse to arbitration for the resolution of differences between the Greek State and the investor.

A provision of very high importance is the one that is protecting the investor from the risk of a possible damage to their investment in case of a subsequent to their establishment to the country amendment of the law (prg. 3, art. 3, l. 2687/1953). Furthermore, there are also multiple regulations for the configuration of a friendly environment for investments. For instance, the "development law" (l. 3299/2004), which regulates the motives for the attraction of investments for the economic growth and regional convergence, the law 3853/2010, which regulates the simplification of the processes need for company formation, the law 3894/2010, regarding the acceleration and transparency of the implementation of strategic investments (fast track) and so forth (Papanastasiou, 2015).

For the investments in the hydrocarbon sector in particular, the basic legislative framework is determined by the law 2289/1995, which aims to the configuration of an attractive legislative framework in order to attract the investments needed for the fastest and most effective utilization of the state's resource wealth. This law was amended by the law 4001/2011 for the best application of the successful practices for the attraction of investments and business management of the hydrocarbon exploration and exploitation sector (Papanastasiou, 2015).

On the other hand, Greece is also showing substantial systemic weaknesses that very much impede the attraction of investments and the overall growth of its energy sector. In general, political stability creates a more stable and safe environment within and outside the country, but it is not an easy target to achieve. The components of a politically stable state are well-known and relate to political transparency, elimination of political corruption, strengthening of the rule of law, strong institutions not strong individuals, a more efficient bureaucracy, overall stable governance. A politically stable state can then begin to attract and support investments, gain international prestige as well as a stronger presence within the international system (Gilpin, 2002).

Greece's tax framework is too complex and unstable without offering enough incentives for the investors (Deloitte, 2013). Constant reforms of the tax system, increased evasion, complexity and frequent changes in legislation, retroactive changes to laws, weaknesses and reversals in the tax authorities' doctrine and long-term tax litigation, are some of the factors that create uncertainty and block the attraction of investments (Rapanos & Kaplanoglou, 2014). It is also interesting how taxes on labor

can influence the rate of the above index (OECD 2013, Taxing Wages, Paris). Taxes on labor are high compared to the rest of the EU, thus creating an unfriendly environment for the investors. Therefore, there is an evident need for substantial changes that would promote competitiveness and growth.

Complexity also describes the Greek legal framework. The large number of laws and ministerial decisions, as well as their unclear implementation obstruct growth and productivity, harm the country's competitiveness and drive the investors away. Furthermore, the increased volume of court cases burdens the judicial system, leading to long delays, thus making it inefficient and burdening the business sector with additional costs. Greek bureaucracy is another burden. Large and expensive public sector with low quality services, fragmentation and responsibilities' overlapping that harm the efficiency, lack of mechanisms for the attraction of talent management from the market, absent management and control mechanism for rendering as well as the reduced use of double-entry system are some of the points that need to be over-passed, because, as the relevant literature concludes, they block growth and productivity and therefore investments. According to the World Economic Forum (2013) findings, until 2013 bureaucracy was the most harmful factor for Greece's competitiveness. The need for taking and implementing drastic measures to deal with bureaucracy is also evident to the conclusions of the International Bank report "Doing Business Report 2015", which evaluates the degree of the convenience of each country, when a business is entering the market and running in it, where Greece occupies the 61st position among 189 countries.

Finally, another important factor that affects critically one county's competitiveness is the legal framework that applies to the market. In the case of Greece, this legal framework is enormous and very restrictive, allowing excessive state control to the market. In fact, from the OECD countries (Conway et al. 2006) a radical regulatory reform by itself could restore Greece's competitiveness more than any other country. Therefore, there is a vital need for a complete regulatory reform that would also include the abolition of regulations that impede competitiveness and investments. This reform should apply among others to the product market, the labor mobility, the continuous training of the workforce, the liberalization of professions.

3.3.9 Conclusion

The main purpose of this chapter was to showcase Greece's potential not only regarding to the exploitation of the hydrocarbon reserves that possibly lie in the Greek subsoil and seabed, but also its potential to become an important energy transit hub and provide to the European Union a stable and secure supplementary solution.

The first part was a brief presentation of the not very successful Greek hydrocarbon exploration past, mainly due to the insufficient data and the lack of political will. However, as examined later, many experts strongly argue and the findings of the most recent studies verify their views that Greece is indeed a wealthy country when it comes to hydrocarbons and in fact they insist that Greece should take advantage of that wealth the soonest possible. Especially regions like the Ionian Sea and the South of Crete are exceptionally interesting and their further exploration has to become an urgent priority. Chronic obstacle to this prospect remains the delimitation of Greece's marine areas, a painful matter which still remains unapproachable and is considered a kind of a "taboo" from the Greek governments. Apart from the unsolvable matter of the continental shelf with Turkey, Greece has not yet progressed to the delimitation of its EEZ with its neighboring countries, something that with no doubt would improve its position and assist Greece to enter the "energy game".

Subsequently, the paper examined the Greek legal framework for the exploration and exploitation of hydrocarbons and presented in brief the Greek Natural Gas System and the recent developments. The Greek Natural Gas system is evolving and is still attracting new investments. Moreover, through the realization of the priority projects that we examined (TAP, LNG facilities etc.) and until the exploitation of its own reserves, Greece has currently the opportunity to evolve to an energy and mainly to a natural gas transit hub. Natural gas has now a leading role to the EU's energy outlook and Greece can provide multiple choices of non-Russian natural gas as a supplementary solution, especially if the amplitude of the Eastern Mediterranean reserves is to be confirmed, the natural gas that Greece will be able to offer will not pass through Russian territory and will bypass Turkey as well, giving this way at least a partial solution to the EU's permanent dilemma: Russian gas or gas originated from other sources with Turkey growing into a European energy lung?

Finally, the essay briefly examined the investment environment in Greece, as apart from the fact that the country is still under close European control due to the economic crisis that is still tormenting Greece, there are some encouraging signs. However, Greece is still in need of vital reforms and there are still important steps to be made, in order to gain the trust and stability that is needed to attract investments and overcome the economic stagnation in which it is today.

Chapter 4

Summary

The fourth chapter includes the semi-structured interviews that were conducted to their entirety as they constitute valuable material and can extend the project's reach, as the interviewees, being highly acquainted in their fields and professions, can offer not only alternative viewpoints for both the researcher and the readers, but also a clearer understanding of complex issues around geopolitics and the energy market. The interviewees were a former Minister of the Environment and Energy, Mr. Maniatis, a professor of International Relations and Director of the Research Programs of the IDIS Institute, Mr. Filis and the Honorary Director at the Ministry of Environment and Energy, Former National Representative in EU and International Energy Institutions and Former Chairman of the Energy Group of the EU Council, Mr. Pippos. This chapter also includes a brief analysis of those interviews from the researcher in order to better clarify their connection to the subject matter.

Interviews with Charalampos Pippos, Konstantinos Filis and Giannis Maniatis translated in English.

1. In what ways do energy matters affect the interstate relationships?

Charalampos Pippos: Energy is a highly networked domain, with a national, regional, European and international dimension, since its entire factional chain (production, transportation, distribution, storage, trading) presupposes, mainly, the construction of pipelines (oil – natural gas) and of special interconnection cable networks (electricity). Therefore, the development of energy, especially in today's globalized environment, requires the structured cooperation and collaboration amongst the states that are interconnected, usually with political memorandums of understanding and in continuation with intergovernmental agreements.

Konstantinos Filis: Energy is a commercial product, which means that under normal circumstances, we would refer to a product like olive oil, wheat etc. that states trade with each other, through free trade agreements or even state protectionism agreements, like it happens with trade and the free market, with whichever states that accept the regulations of the free market or not. In this case however, energy, due to

its importance which stems from the fact that it moves not only the households, but also the industry, the business sector, as well as the heavy industry of the states that have it. Therefore, energy has acquired a dimension that goes over its commercial dimension, a geopolitical dimension, meaning a dimension that refers to the interstate relations. There, we can categorize states to three different levels. The first level refers to the states that are rich in hydrocarbons, which means those states that are rich in hydrocarbon production, whether that is natural gas or oil. The second level, refers to the states that are important for the transportation of the product, those are the states that important energy projects go through their territory, therefore they become important transit agents, since they transfer the product, for example Ukraine, or Turkey, in case of course the projects with regards to the South European Corridor are to go forward. And there is a third category of states, meaning the customers, without having any other particular dynamic, whether that is to produce or transit, rather than to consume, the consumer states. Of course, there can also exist combinations of those categories, which means that there can be a state that is an important consumer, but at the same time it can be an important transit agent as well, for instance Turkey, which is a country of eighty million, with a thirsty market, therefore it is an important market for the wider region of the Middle East and the Eastern Mediterranean, but it is also an important transit hub, if eventually certain projects go through its territory. Therefore, there are three categories of states and there can also be combinations of those categories. The importance of energy is recommended by the fact that the states that own the energy could as well use – even though this used to happen more in the past, since nowadays there is an offer surplus, so the problem has been reduced, but even now, supposedly that one or two states or OPEC, for oil, decided to control the oil flow, this would cause a big problem to those states that are consuming the product, without having an immediate access to it- so some states could use energy, whether they produce it or transfer it, in order to promote other types of interests, which may not relate exclusively with energy, but broader strategic interests of a country.

Giannis Maniatis: Energy issues constitute an important part of the hard core of the foreign affairs of every state, but also of their economic and growth dimension. Therefore, that means that the energy dimension always constitutes a significant factor as to how the geopolitical balances or imbalances are shaped and at the same time, how the production model of each state is shaped. We see for example that over

time, hydrocarbon reserves were and continue to be a cause of tension, of war and civil turmoil, while, of course, currently the development of pipelines has created new conditions and new parameters. Until now, we only had the localization of the reserves, which determined the geopolitical balances and the regional cooperations, however now a new factor has entered the equation and that is the transit of the natural gas pipelines through the states.

2. Hydrocarbons are currently the main energy source of the European states. Based on the new energy targets of the European Union, do you believe that this could change and how soon in favor of RES (Renewable Energy Sources)?

Charalampos Pippos: The European Union's official agreed targets (http://www.consilium.europa.eu/el/policies/energy-union/) include, apart from the priority to energy efficiency, the fully integrated energy market, research, development and competition, the "cleaning" of the economy from carbon (reduction of greenhouse gases), mainly through the promotion of renewable energy sources (RES) and mid-long term through the promotion of other clean alternative fuels as well, such as possibly hydrogen and nuclear fusion, energy security, solidarity and trust are another basic communal objective. Specifically, energy security presupposes the continuation of the rational use of conventional fuels alongside further dynamic growth of RES and energy efficiency, due to EU's high dependence on hydrocarbon imports (oil and natural gas from third countries). In particular, the agreed mid-term total realistic community targets for RES and energy efficiency are 20% increase by 2020 and 27% by 2030 compared to 1990 respectively, which are to be allocated with flexibility among the member-states, proportionally to their capabilities. Meanwhile, because:

- On the one hand, over 50% of EU's energy needs are being covered by external suppliers and with a constantly increasing trend (based on established community evidence from 2012 almost 90% of oil, 66% of natural gas and 42% of

solid fuels that were consumed from the EU, were imported and their cost was over 1 billion euros per day) and

- On the other hand the basic RES (wind and solar energy) have "stochastic character", which means that the energy production coming from these sources depends on the constantly changing conditions of wind and sunshine, the necessary stable over time electricity production and transfer to the networks (which means stable voltage and frequency of electricity in order to avoid "black outs"), require, from a technical point of view and on a mid-long term base, the combined use of the most environmentally friendly conventional fuels (mainly natural gas, as the most environmentally friendly of those) and RES and energy efficiency, on a national, communal and international level.

Therefore, the energy balance of the member-states of the EU will change over time with a constant reasonable increase of the RES use, in combination with the necessary continuation and gradual increase of the use of the less polluting conventional fuels, such as natural gas and liquefied natural gas towards the stability, credibility and sustainability of the energy system.

Constantinos Filis: The RES, do have a dynamic, of course there is an environmental dimension, there is a political dimension, there is a tendency to shift towards them, but they also have some important issues as well, that relate firstly, with the fact that they do not produce many jobs, at least at the production stage, they also are expensive to their production but also their transfer, they generate negative reactions from the local communities and other interests that incite intensities within the communities. However, there is certainly a declining course for oil, there is an important dynamic with regards to natural gas, since it is an even more clean form of energy, but without a doubt the future belongs to RES, but in a twenty years depth from now and without being able to replace fossil fuels, they can only play a complementary role and I think that goes for the EU as well. Finally, the RES are still subsidized from the states to a large extent and that is against the European regulations, therefore is something that needs to be limited, if not annihilated.

Giannis Maniatis: According to the 2020-30 targets and according, of course, to our central targeting until 2050, Europe has extremely optimistic, environmentally friendly targets. I think Europe is anyway the most optimistic player world widely and

our experience until now or at least the very good approach until now in relation to the 2020 targets, shows that Europe is determined to continue to have the world leadership when it comes to such issues. My estimation is that we are heading towards economies, whose main energy ingredient is going to be natural gas and, of course, the RES more and more. Therefore, the Energy Union, which constitutes the new energy vision of Europe, as it has been shaped during the late 2014 to early 2015, is the guide for all member-states. Here, I would like to point out that, truly, the 27% participation of the RES in the energy balance of the member-states in view of 2030, the participation of natural gas through the construction of the missing links of the natural gas distribution networks between the member-states, the construction of new infrastructure for LNG, which during the last years is the biggest supply source of the member-states, all these advocate that we are moving towards a sustainable Europe.

3. Part of the EU's energy targets is also the creation of a single European and competitive energy market. How close do you believe the member states are to that target? Are there any non-convergence samples towards that target?

Charalampos Pippos: Basic elements of the communal strategy for the creation of a truly single and competitive European energy market are the diversification of the external energy supply, the upgrade of the already existing energy infrastructure, the institutional integration of the internal energy market, according to the related Community directives and regulations, the RES and the energy efficiency and energy saving. Despite the convergence differences amongst the member-states, which are mainly due to the different development stages of the energy infrastructure and to each ones current national policies and financial conditions and potentials, the convergence of the markets is being gradually, but steadily promoted on a European level.

Constantinos Filis: In order for a single and functional market to exist, first of all there needs to be sufficient interconnection amongst the member-states, either actual or virtual, meaning that the Southeastern Europe has to be more interconnected with Central Europe, whose market is more mature and has a greater pluralism of suppliers. The single market, is something very hard to achieve, besides the fact that it is a European target and that is due to the fact that the interests of the 27 member-states in many cases are different and divergent and they address to different suppliers,

according to their energy but also wider strategic interests. Therefore, you cannot enforce a member-state to accept the concept of the single energy market and that is why the decisions that relate to the energy matters are made on a national level and not on a central level from Brussels, meaning from the transnational organism, namely the EU. Therefore, I think that there is definitely a convergence tendency and a tendency from Europe to move on a single line towards its suppliers, but in fact it cannot happen. Currently, we have the characteristic example of the Nord Stream, the pipeline that connects Germany directly to Russia, for which the two first lines have already been constructed and now even though there are many reactions from other European states, Germany, the German companies and not just the German ones, seem to continue undeterred to the construction of the of the second network, Nord Stream 2. This shows and confirms that there can be a wider convergence and a tendency towards further interconnections and infrastructures, as well as for a single line, however this is really hard to achieve within the next few years. In the foreseeable future having a single European market with all that this implies, since this convergence has to be on a technical and on a regulations level, things not so easy to achieve, seems very hard.

Giannis Maniatis: This target is truly great, important, it is the new vision, which is exactly what the Energy Union is about. As Europe, we managed to create the Monetary Union, with a common currency, we have the Single Banking Union and now we proceed to the next level, that of the Energy Union, which will offer us the possibility to obtain the fifth freedom, meaning that, as until today we enjoyed the free movement of people, products, services and capital in Europe, the four freedoms, now, as such, we can also implement the Energy Union, therefore the free movement of energy products, which is something really great. Europe is on a good path towards that direction. In fact, Commissioner Cañete, as well as the Vice-President of the European Commission Maroš Šefčovič, especially the latter, have undertook this as a personal project and they run it with significant intension. Also, the member-states, advocate to a great extent and that is why I am very optimistic that we indeed are on the road to convergence.

4. The EU is looking to enhance its energy security through further diversification of its energy sources away from Russia. Which are its most realistic alternative options in your opinion?

Charalampos Pippos: After the developments in Ukraine in 2009 and in implementation of relative decisions of the European Council (March 2014, during the fifth Greek Presidency at the EU Council), about the need to achieve certain mid-term and long-term targets with regards to the security of energy supply, the European Commission has already proposed a series of key actions on multiple fields in order to further reduce energy dependence on the Russian Federation, as follows:

- Filling the gaps in vital infrastructure links, so that potential supply crises can be quickly dealt with, with the direction of energy flows throughout the EU, depending on the needs. Within this framework, the Commission has pointed out 33 infrastructure projects of vital importance.

- Diversification of countries and supply channels. In 2013, 39%, by volume, of the EU's natural gas imports came from Russia, 33% from Norway and 22% from North Africa (Algeria, Libya). The EU will maintain is relations with reliable partners, but at the same time will pursue agreements with new countries-partners and supply channels, e.g. in the Caspian Sea region, further expanding the Southern natural gas transit corridor, with main promoted project the Trans-Adriatic Pipeline (TAP) (https://www.tap-ag.gr/), developing the Mediterranean natural gas hub (http://www.igi-poseidon.com/en/eastmed) and increasing its LNG supplies.

- Reinforcement of the emergency mechanisms and solidarity and protection of infrastructure of vital importance.

- Increase of domestic energy production.

- Improve the coordination of the national policies and reinforce EU's energy diplomatic role to speak with one voice on the issues of external energy policy.

- Further development of the energy technology and

- Increase of Energy Efficiency.

Constantinos Filis: The most realistic alternative at the moment is Azerbaijan, however in no case can it compete with Russia, quantitatively speaking. Russia produces almost 640 bcm of natural gas per year, while Azerbaijan produces 20-25 bcm. The second most realistic option currently is that of the Eastern Mediterranean, mostly Israel and secondly Cyprus and Egypt, but again they cannot compete with Russia, however they are important as a supplement. Thereafter, one case that can

definitely create new data regarding the security of supply for natural gas, towards Russia, is Iran, but with Iran, there are other kind of problems, mainly political and there also seems to exist a tendency by the American leadership to marginalize Iran, something that would probably influence the latter's energy relations with the EU as well. Now, the countries that are on the other side of the Caspian Sea, like Turkmenistan, in no case can they compete with Russia and they do not even see the prospect of interconnecting with Europe, as they are more interested in the Chinese market. There are also states such as the Iraqi Kurdistan, which on one hand has quantities of natural gas, but on the other hand, at the moment, due to the instability that prevails in Iraq, it is very hard to see it entering the equation and there is also the American shale gas, which has good potentials, however at the moment it is more expensive than the Russian gas, as it will have to come from America in the form of liquefied natural gas and that is more costly and quantitatively speaking it cannot change the current data of the EU, since America's orientation seems to be towards China and the Asian market rather than the European one.

Giannis Maniatis: The first alternative, which is already being implemented, is the so-called South Corridor, meaning the natural gas supply, coming from Azerbaijan via the TAP pipeline. At the same time, Europe, always in the framework of the Energy Union, has proclaimed that as member-states we have a duty to develop the indigenous energy resources, meaning the hydrocarbons, as fossil fuels and the RES. Those are the new, important pillars on which the reduction of our dependence on Russia, will be based on. Russia was, is and will remain a strategic energy partner for Europe, however it is only sensible for Europe to seek less dependence on one producer. To that direction, Azerbaijan could provide a solution, as well as the Southeastern Mediterranean, which is a new source. I believe that it is very positive that the member-states and the Union, support the construction of new infrastructures for LNG in many member-states, which means that we will also have access to new energy suppliers. Up until now, it is usually Algeria, Great Britain, Norway that supply, but now with much more LNG units, we will receive gas from many different countries, even the USA probably, so we can have more alternatives.

5. Could Eastern Mediterranean enter the EU's energy agenda? Against such a prospect, what do you think could be the position of Greece?

Charalampos Pippos: The Eastern Mediterranean is already, long ago, officially a part of the energy agenda of the EU, with crucial validation point of this fact, the approval of the first list of projects of Common Interest (PCIs) from the European Commission during the 2nd semester of 2013, which also included the East-Med natural gas Pipeline, which is of strategic importance for the EU and which as the Trans Adriatic Pipeline (TAP) is expected to pass through Greece, having as an additional key advantage over other alternative routes that transit through politically unstable regions and countries outside the EU of the SE Mediterranean, such as Turkey, is avoided.

Both East Med and TAP are two of the most important axes of energy transit within the framework of the so-called Southern Gas Corridor for the EU and their choice was the result of a long and painful negotiation in special Community Work Groups, consisted of national experts from the member-states under the presidency of the European Commission, to which the official delegate of the country was the competent director of the Ministry of the Environment and Energy, Charalampos Pippos.

At a recent relevant international energy conference "Athens Energy Forum", which was held on February 1st-2nd 2017, at Athens Hilton Hotel, presentations and discussions also included the East-Med Pipeline.

A special point worth mentioning for this important Community energy project, according to current data, is that the probable starting time of construction, over other potentially competitive solutions, will depend on many factors, except for the geopolitical one, among which:

- The developments in availability by the countries of the region of technically and economically exploitable natural gas deposits, in order to pass via the pipeline to the markets of the West, over the internal consumption of big portion of those quantities, which is an issue of close examination for example for Israel, whose some energy experts seem to be "flirting" with the most "economical", according to them, but obviously less safe solution, of the passage through Turkey, instead of the passage only through Community states, including of course Greece, via the East-Med.

- In the meantime, the still pending EEZ agreements amongst the states of the wider region.
- The technological developments with regards to the construction of such large underwater routes.
- The ever-growing role of LNG and of the local and regional Terminals for its utilization.

(https://ec.europa.eu/energy/sites/ener/files/documents/pci731en2015.pdf, http://www.iene.eu/ienes-latest-analysis-examines-the-prospects-for-an-east-med-energy-corridor-p2951.html http://mignatiou.com/2017/02/efictos-ke-ikonomika-viosimos-o-agogos-fisikou-aeriou-east-med-meso-elladas/#.WKDYDAUeCHA.facebook).

Constantinos Filis: Greece's position can be dual, either through the underwater pipeline, which is already under examination, namely the EastMed and which will transfer natural gas from the deposits of Israel and Cyprus, through the Greek territory to Europe. This is a plan that might be under discussion, but it does not seem to be within Israel's priorities, at least for the time being. Therefore, in that case, Greece could play the role of the transit agent. The second scenario, is through the floating LNG terminal, which will be constructed in Alexandroupoli, where Greece can gather quantities of natural gas that will come from Israel, Cyprus and Egypt and from there via a vertical axis, the interconnecting pipeline Greece-Bulgaria (IGB), send those quantities to Europe. Therefore, the two options for the participation of Greece to the transfer of natural gas to Europe from the Eastern Mediterranean is either through the EastMed pipeline or through LNG, which will reach to Alexandroupoli and will enter a pipeline network in order to reach to Europe.

Giannis Maniatis: Northeastern Mediterranean seems to be the new energy El Dorado. If we take under consideration the recent discovery of reserves, such as the Tamar and Leviathan in Israel, Aphrodite in Cyprus, Zor in Egypt, as well as Lebanon's initiatives and of course, the very good information we have with regards to the Greek reserves, then it seems that a new energy supply source is emerging for the entire Europe. What is really important is that we unite our forces through regional partnerships, in order to create economies of scale and create greater added value, because, truly, the Northeastern Mediterranean is a new supply source for the

entire Europe and can upgrade the member-states' geopolitically and economically. Greece's position can be significantly important to that direction and that is why we urgently need to begin the hydrocarbon explorations as well.

6. Which are the main reasons that prevented/prevent the exploration and exploitation of hydrocarbons in Greece? Why is there still a lack of mobility in this area?

Charalampos Pippos: After a long period of lack of systematic hydrocarbon investigations in Greece, for various, mainly political reasons, since 1998 until 2008, subsequently, starting in 2009, while professor Giannis Maniatis was a minister at the then competent Ministry for the Environment, Energy and Climate Change, he restarted dynamically the related research, with a) the systemic reassessment of the available, until then, seismic data from the preceded geological studies, exploration drillings and geophysical surveys, b) drafting and voting from the Greek Parliament of a new relative legislation for the Exploration and Exploitation of Hydrocarbons in the country (l. 4001/2011), c) the establishment of a new national body "Greek Hydrocarbon Management Company SA" (l.4001/2011, Chapter B) and d) the launch of the preparation and subsequently implementation, by the end of 2009 and then, of new technically advanced geophysical surveys in many areas of the Greek territory, through relevant proclamations (open door invitations) with favorable results.

Constantinos Filis: Of course there is the classical Greek indolence, the bureaucracy, the various distortions within the public system and the way that competitions did or did not happen, the known delays etc. However, between 2012 and 2014-15 and during the Ministry of Maniatis and a little earlier, there was a thorough and professional work that took place with regards to the competitions, which seems that at some point that dynamic was interrupted. I think that currently and under the current circumstances it will return, however in reality someone should also examine the real potential of Greece and mainly the reasons why until recently the level of interest was particularly low. For instance, this could be due to the low competitiveness of Greece, it was definitely due to the low oil price which remains low, it also has to do with the fact that Greece's most important deposits are lying in deep depths, especially those at the south of Crete, it also has to do with the fact that Greece did not attract investments for this sector, since Greece does not have the know-how neither the economic ability to go along by itself, so there is also the need

to attract the know-how and the experience needed for such ventures. Therefore, to that end Greece needs the necessary capital, but also address to the right parties, something that did not happen to the extent that was necessary, with the exception of this three-year period. Furthermore, it also requires a stable business and tax environment in order to attract the companies' interest, because if you have a disadvantage -and at this point Greece is not an energy El Dorado- you have to provide some motives to your potential investors, motives that Greece did not use to have in the past.

Giannis Maniatis: There are many different reasons that have led to that. I confess that personally I have posed that question multiple times, why the exploration projects did not go forward during the last years. There are indeed many individual reasons, personally, I cannot comment on something I have not been part of, however I believe there are mainly two parameters that affect that issue. The first one is that during the past years the price of oil was very low and since the Greek seas are very deep and with difficult geophysical structure it was not worth it, therefore importing from other easier countries, countries that had cheap natural gas was more efficient. Consequently, I believe that the low price, along with the difficult geophysical structure were two very vital reasons, not the only ones, but certainly very important. Now, why have the exploration projects stopped, is something that I cannot answer, others can answer that question.

7. Beyond the regions of the Ionian Sea, the Gulf of Patras and the marine area Southwest of Crete, are there any data that indicate the existence of any deposits at the Aegean Sea? What are the reasons that keep the official investigations (as well as the prospect of exploitation) away from that area? In what ways could Greece make the exploitation of any potential deposits in the Aegean Sea possible?

Charalampos Pippos: The already exploitable deposits located at the Northern Aegean Sea (Prinos and South Kavala), since the early 1980s until now, are an irrefutable presumption for the existence of exploitable oil deposits in the Aegean Sea as well and beyond the already under investigation areas, which are correctly referenced to the question.

On the other hand, the only area of high geological and geophysical interest for the possible existence of large exploitable deposits of natural gas in the SE of Crete has not been systematically investigated yet, due to the need to prioritize relevant political and legal agreements for the precise delimitation of the EEZs by the countries of the region, which are already underway by the Ministry of Foreign Affairs between Cyprus, Greece, Israel and Egypt, via relevant interstate agreements, while the relevant discussions with Libya will follow later. Subsequently, the relevant tender procedures for the commissioning of areas for exploration and exploitation will take place.

Following those mentioned in the previous question, despite all the disruptions and delays, the course of exploration and exploitation of hydrocarbons in Greece and the extremely successful production of oil for decades in the N. Aegean Sea (since 1980 till today), without any environmental or other kind of effects (see brief official relevant history for the exploration of hydrocarbons from the competent Ministry for the Environment and Energy: http://www.ypeka.gr/Default.aspx?tabid=765) presages a very favorable future.

Constantinos Filis: There are no indications that we have something more other than Mpampouras and Kavala in the Aegean Sea, at least something as important as to worth it get into the procedure of exploring. Of course, Greece's relations with Turkey and Turkey's disputes are affecting the Greek government as well as the companies, but in reality up until now, we do not have such strong indications for the Aegean Sea, in order to get into a situation, which will definitely lead to a controversy with Turkey and of course, in a long-lasting procedure, whose results are not even known nor definite. Furthermore, we have not conducted any seismic surveys for the obvious reason that there is the issue with Turkey, which stems from the fact that Greece has not yet expanded its territorial sea to 12 n.m. and Turkey still disputes the status quo of the Aegean Sea.

Giannis Maniatis: Because this question addresses key foreign affairs' issues, my answer is going to be consciously very clean and clear. Greece has proven, strong indications for existing reserves in the Ionian Sea and at the south of Crete and that is why we started off from there. The indications are significantly less for the Aegean Sea, however to a great extent, the necessary seismic surveys have not been conducted there, and therefore there is no point to discuss about the area without the

necessary seismic surveys. However, Greece will whatsoever investigate every spot of its territory and sea, where it exercises sovereignty or sovereign rights. We had a business plan, as well as a timetable and we were ready to begin from the Ionian Sea and we also had in mind the Aegean Sea, as well as other areas. Consequently, I want to hope that this will continue with a scheduling, which will be under the central coordination of the government, the Prime-Minister, the Minister of Foreign Affairs and the Minister of Energy, so that the result can be positive.

8. Could the exploitation of Greece's hydrocarbons change the economic situation of the country, but also its geopolitical relation with the EU and other third countries?

Charalampos Pippos: Indeed the dynamically promoted by the Greek governments, especially since 2009 onwards, exploration and exploitation of Greece's hydrocarbons, based on the available until today high know-how, could substantially contribute to the improvement of the economic situation of the country, especially during the current crisis and facilitate, along with a series of structural and investment decisions, the rapid restoration of the Greek economy and the return to sustainable development. At the same time, it is certain that the dynamically developing energy partnerships of Greece with neighboring third countries, in combination with the rapid promotion mainly of large pipelines of natural gas, like TAP and the natural gas interconnection between Greece and Bulgaria (IGB), will reinforce the geopolitical position of the country, upgrading it gradually to an important energy transit hub within the wider region of SE Mediterranean.

Moreover, the energy diplomacy of the country, exercised by the Greek Ministry of Foreign Affairs and based on the national and communal legislation, as well as on the relevant international conditions, is a guarantee for a stable and successful course (see official relevant survey: http://www.mfa.gr/energeiake-diplomatia/)

Constantinos Filis: Undoubtedly, a country that enters the energy map as a producer, to the extent that it has the quantities in order to not only cover the domestic demand, but also export the product, yes, this would change the data as well as the correlations. Greece, a country that until recently was absent from the energy map, could suddenly enter the energy map, not just as a transit hub, but also as a country

that produces the product. This would upgrade its geopolitical importance, it would give Greece a word and a role regarding the energy developments and through its interconnection with Europe provide another solution, which would probably not be decisive towards EU's energy security of supply issue, but all that just in case Greece has the necessary quantities, in order to attract someone's interest. Economically speaking, it is a given that such a potential would reinforce the local economies, it would provide more job opportunities, especially in the construction stage, but I believe less in the implementation stage.

Giannis Maniatis: Undoubtedly yes. A loud yes. I strongly believe and have strong indications about it. However, in order to achieve that, we need consistency, continuity, an investment environment that is welcoming for the investors, we also need to make sure that everything happens with respect to the environment so that we can also have the necessary local alliances. It is enough for me to mention that in a recent announcement of the ELPE, it is stated that from the Patraikos site, Greece can have public revenues of 150 million dollars per year for the next 25 to 30 years, which is how long the exploitation of the reserve is going to last. If we assume, realistically, that there are at least another 10 Patraikos-like sites, then we are talking about an amount of 1.5 to 2 billion euros that can feasibly reach to the Greek economy within the next 10 years from the exploitation and development of hydrocarbons and because it is often for hydrocarbons to hide pleasant surprises, I think that in the course of the investigations we might discover more reserves, which can make us even more optimistic.

9. Could Greece offer a safer alternative and a strategic advantage to the EU (compared to its current suppliers)?

Charalampos Pippos: based on the information presented in the answers to the previous questions, the answer to this question is undeniably positive. The diversification of routes and sources of energy transit, through the already existing ones and the planned transit pipelines of natural gas, which are going through the Greek territory such as:

- The Greek natural gas system imported by Russia
- The already active natural gas interconnection with Turkey (Evros)
- The under construction important natural gas pipelines, TAP and IGB

- The under upgrade important LNG terminal at Revithousa
- The promoted construction of a modern Floating Storage and Regasification Unit (FSRU), at Alexandroupoli and
- The planned promotion of a large pipeline of Common Interest (EastMed) on a mid-term basis

form the conditions, under which Greece, as the single country with a remarkable political stability and prospect of dynamic development within the wider region, can become a safe supplier and a strategic energy partner, not just for the EU, but for other neighboring countries of the wider region of the SE Mediterranean as well, contributing this way to the enhancement of prosperity and political stability, in this sensitive region of the world.

Constantinos Filis: Of course, such a potential would definitely provide a strategic advantage to the EU, since Greece is a member-state, it is a state at the narrow core of the EU and it is a predictable partner, which is also very important for the Europeans. I wish that the Europeans had what we call the indigenous resources and that through the production of the European countries, Europe could limit its dependence on external suppliers.

Giannis Maniatis: Definitely yes. Greece and Cyprus, as they have combined their forces for national matters, should as well combine their forces for energy matters, I call that common energy doctrine for Greece and Cyprus. The two states should move forward in absolute coordination and fraternity, because only this way can we maximize our national benefits and yes the answer is significantly positive, Greece can become, along with Cyprus, a new strategic supplier for Europe.

10. Which is Greece's current priority in relation to its energy profile – become an energy producer (hydrocarbons-RES), or evolve into an energy transit hub?

Charalampos Pippos: From the previous answers, as well as from the official national data that were presented, it is clear that Greece's energy policy remains multifaceted and balanced, based on the relevant national and communal priorities and taking into account the international developments with regards to that field, in combination with the gradual development of all its available energy sources, with respect to the environmental commitments and at the same time the dynamic

promotion of the energy transit pipelines of national and communal importance will make Greece an important energy transit hub in the wider region of the Mediterranean.

More specifically, the plan of the current Greek government for the transition to a new energy mix, which was presented by the current Minister for the Environment and Energy, George Stathakis, during his speech on Monday 20.3.2017 at Berlin, within the framework of Berlin's Energy Transition Dialogue 2017, which was held by the German government, includes the reinforcement of the RES participation while securing energy security and the reinforcement of competition for the benefit of the final consumer.

This plan, in continuation and in consistency with the basic timeless axes of the country's energy policy, includes six central pillars, with respect to:

- The completion of a stable and transparent institutional framework, within which the further penetration of the RES will be achieved
- The emergence of Greece as a "key" country for the transportation of natural gas in the SE European region
- The introduction of technologies friendly to the environment in lignite production
- The improvement of energy efficiency, especially in the building sector
- The creation of opportunities for the participation of citizens and collectivities to the energy market, through a bill drafted by the Ministry with regards to energy partners

Especially for pillar six, the current government, as stated, is in consultation with the European Commission in order to set up an ambitious plan for the islands, for the adoption of a new energy model, with the completion of interconnecting pipelines and the establishment environmentally friendly autonomous systems. This initiative, "energy islands", is expected to be launched during the presidency of Malta, for which the first forum will take place in Crete, in June 2017.

Constantinos Filis: I believe that Greece's priority is, of course, to become an important transit hub for the product and thereafter to examine whether is it possible to become a trading hub for natural gas and in the future and on a third level, and time

speaking, I would see the possibility for Greece to produce the product and be one of the producers of the wider area and mainly of Europe.

Giannis Maniatis: Both to the same extend. The one is not against the other. We had started doing both of them at the same time and as such they can continue on. On the opposite, I believe that the simultaneous promotion of both can assist them both. We cannot abandon or prioritize the one or the other, but go forward with both the exploitation of our hydrocarbons and with the shaping of Greece into an energy transit hub for Europe. Already, TAP is becoming a reality, the Greek-Bulgarian pipeline (IGB) is in a very good maturity level, as for the EastMed, which links Israel's and Cyprus's reserves via Crete and Peloponnese to Italy, we have proved that techno economically and commercially is feasible and achievable. Consequently, Greece is becoming a new energy hub for Europe through the pipelines. With regards to the other part, that of the exploitation of hydrocarbons, which seems to be less active, is because the government does not promote it as it should be. While I was in the Ministry, I had proclaimed and ratified the first three contracts. I had also proclaimed the competition for 20 sites and we already have offers for three of them, as well as the competition for the three terrestrial sites, so in total within three and a half years Greece could currently have nine sites on air, with contractors, however, unfortunately this did not go forward. Therefore, it is also a matter of political will and political priorities and everything shows that the current government does not have the same prioritization, at least the same that we used to have, but I really wish that they will obtain it.

11. How long could it take for Greece to become an energy transit hub and under which conditions? In which ways do you believe that the internal situation and foreign policy of Turkey can influence that prospect for Greece?

Charalampos Pippos: According to the existing implementation timetables of the already promoted large energy transit large projects for natural gas, which were outlined above, and more specifically:

- The large TAP pipeline (http://www.tap-ag.gr/%CE%9F-%CE%91%CE%B3%CF%89%CE%B3%CF%8C%CF%82) which is expected to be completed and to be commissioned in 2020 and

- The important interconnecting pipeline between Greece-Bulgaria (IGB) (http://www.depa.gr/index3.php/content/article/002005005/179.html), whose first phase concerns the construction of a pipeline, of 182 km length and 32 inches diameter, with commercial start by the end of 2019 – early 2020 and the second phase concerns the addition of a compression station in Bulgaria, with commercial start four years after the completion of phase one, while its implementation will depend on the market's response,

in combination with:

- The upgrade of the LNG terminal at Revithousa (http://www.desfa.gr/?p=10963), while maintaining the plans for the promotion of EastMed on a mid-term basis of ten years and the

- Promoted implementation of the FSRU, at Alexandroupoli, by the company GAZTRADE, of the Kopelouzos group (http://www.gaztrade.gr/en/the-company/the-project.aspx),

it is expected that the basic conditions for Greece to become an important energy transit hub will be met within the coming decade, 2020-2030, during a critical period, landmark for the energy developments in the wider region of the SE Mediterranean, if the existing implementation timetables are to be respected, as well as the start of operation of the relevant projects.

Constantinos Filis: Greece could become an important country for the transit of the product in approximately a ten years depth from now. If we take a look at the projects that might come from the Eastern Mediterranean, but even from Iran, in the future, or other sources (e.g. USA) for LNG, this could not happen before 2025. Greece, has to continue to be a stable country, but also want the surrounding region to be stable as well, since for instance we do not have anything to gain from the Balkan crises, because if we consider the vertical axis that are to be constructed, the crises also affects Greece's position. Further, Greece has to provide tax motives to the companies, without that meaning that there are going to be any extreme agreements, but definitely has to provide those motives, also Greece needs to be more extrovert, which means to advertise itself abroad and portray itself as a country that can be a hub and highlight its comparative advantages, mainly that it is an EU country and a member of the Eurozone, as well as its strategic geographical position. Furthermore,

with regards to Turkey, I do not think that Greece is affected. Greece is affected to the extent that the projects that are supposed to go through Turkey might be affected, in case the situation goes completely out of hand, but if we are talking exclusively about Greece, it could be affected by the fact that Turkey wants to be the one that has access to the Eastern Mediterranean, but competition is a part of energy relations, as is cooperation, therefore in some projects we might have to cooperate with Turkey (TAP), therefore want Turkey to remain stable, but be competitors with regards to other projects and this is part of the "game", so you cannot avoid it.

Giannis Maniatis: Turkey has always been a noisy neighbor. Lately, Turkey has been even more noisy than in the past, however also needs to understand that the international law is the only base on which we can discuss. Greece respects the international law, the international treaties and especially the treaty of Lausanne, consequently Turkey has to adapt to the new rules as have all the civilized states. Now at what time, I would give a 5 to 7 year time frame, under normal circumstances. For instance, TAP will be ready in two years and the IGB pipeline will be ready again in about 2 to 3 years. The EastMed will take a little longer, however the first reserves (Patraikos, Katakolo and Ioannina) can begin to be exploited within the next two to three years, which is also a reference point.

12. In your opinion, which country has the comparative advantage and consequently the best chances of becoming an energy transit hub for Europe, Greece or Turkey and why?

Charalampos Pippos: According to the available official data that were outlined and the remarkably unstable and problematic politically period that Turkey is going through, it becomes clear that Greece, being a member-state of the hard core of the EU- despite the current difficult economic conjuncture, which is expected to improve soon- and most importantly, being a strong pole of political stability in the wider region over the neighboring Turkey, is the European country that has the comparative advantage and consequently the best chances of becoming an energy transit hub, not just for Europe, but for the wider SE European region.

Constantinos Filis: Yes and no. Greece can substitute for Turkey, since the only project that does not include Turkey for the time being, is just the one with the Eastern Mediterranean. In the future, we may have one project with Iran, but for the

time being there is just the EastMed project. Therefore, in relation to all the other projects, Greece's fate depends on Turkey's fate, so we only have the comparative advantage when it comes to the Eastern Mediterranean states, but we need to cooperate with Turkey for all the rest and cannot exclude Turkey.

Giannis Maniatis: Turkey is anyway an energy transit hub and we have to recognize a subjective geographical reality. Many pipelines are going through Turkey and its geographical location helps a lot. What we say on every tone is that the West and Russia have to be very careful and not put all their eggs into one basket and especially when it comes to a country with such a high country risk, because it is not wise for the economic and development policies both for Europe and Russia and that is mainly the reason we are claiming an equal development, on a pipeline level and other energy infrastructures. Finally, in order to make clear the fact that Greece is a more safe option, the Greek foreign policy and the Greek energy diplomacy have to emphasize and highlight that fact in every chance and constantly promote that message to their interlocutors. However, even though we had made big progress with that, lately I personally do not see it happen any more on the scale that the circumstances require. In any case, I am deeply convinced that, if we follow a nationally responsible energy strategy and diplomacy, Greek could very soon become an important energy transit hub for Europe, something that will upgrade our geopolitical position and will provide us the comparative negotiating advantages towards our lenders and other issues of internal policy.

13. Which project do you consider to be more competitive and economically more viable for the transportation of natural gas from East Mediterranean to Europe-pipeline through Turkey or the East-Med?

Charalampos Pippos: The most competitive and economically more viable project, always according to the official national (DEPA) and communal (EC) data, is the one that is included to the PCIs, and that is the Eat-Med natural gas pipeline, against a just supposedly "competitive" project via Turkey.

More specifically, the East-Med pipeline entered the PCI catalogue of the EU in 2013. According to the European regulation 347/2013, East-Med's participation in the catalogue was renewed in 2015. During the same year, the co-financed by Europe action "Eastern Mediterranean Natural Gas Pipeline-Pre-Feed Studies" begun.

All these co-financed studies that were elaborated within the framework of the Pre-Feed Studies, make clear the technical feasibility, the economic viability and the commercial competitiveness of the project. Furthermore, they highlight the added value of the East-Med Pipeline and its complementary character, in the framework of the NE Mediterranean's export of natural gas potential, towards the reinforcement of Europe's energy security.

According to these studies, the pipeline's planned capacity will be 10bcm of natural gas per year, with the ability to reach at 16 bcm. It is noted that similar projects, regarding their implementation difficulty due to the great sea depth, have already been constructed and successfully function (Medgas Pipeline, Algeria-Spain), or they are in the start-up phase of their construction (Galsi Pipeline, Algeria-Italy).

It is highlighted that the East-Med's Pipeline development, enjoys from the beginning the support of the governments of the states' that will go through, as much as the EU's, as already noted

Furthermore, the conclusions of the above-mentioned co-financed by the EU studies give a new impetus to the development of the project, through the undertaking of initiatives on a national and a European level.

Within this new framework, in early April 2017, the energy Ministers of Greece, Cyprus, Israel and Italy, signed, in the presence of the European Commissioner for Climate Change and Energy, Miguel Arias Cañete, a Joint Declaration for the further systematic monitoring and promotion of the project's development.

(http://www.depa.gr/index3.php/content/article/002005007/539.html)

Constantinos Filis: The answer is that the EastMed might be more expensive, have bigger technical challenges, due to the large depths, but in reality, has geopolitical advantages, due to the non-involvement of Turkey, as well as economic advantages, because the Turkish project, apart from the insecurity that Turkey's involvement creates, as it constitutes Turkey a key country for the gas transit to Europe, so Europe become Turkey's hostage, it is also an expensive project, maybe not as expensive as the EastMed, but not significantly less expensive than the latter, since there would have to be constructed a whole new pipeline system in Turkey, in order for the gas to reach to European Turkey and from there to Europe. Therefore, I

would have to say that to me, the precedence of the EastMed is clear, however I am afraid that it is not clear to the eyes of the ones that are going to make the decisions, especially the ones in Israel, but other Eastern Mediterranean countries as well.

Giannis Maniatis: This is a big discussion and there are two different approaches. There is the well-known "conflict" between the economists, who believe that the pipeline from the reserves to the coast of Turkey is less expensive, which is true if we consider only that length, however if we consider that the comparison measure cannot be that since another new, exclusive pipeline that will begin at Turkey's coast and cross Turkey in order for the natural gas to reach to the boarders with Greece or Bulgaria and from there to the European consumers will have to be constructed, things change. Therefore, if we take into account both the country risk that Turkey creates and the large pipeline that needs to be constructed in Turkey, then EastMed is an absolutely competitive project in relation to the Turkish pipeline, but even in relation to the LNG option via the two units in Egypt. This is also a conclusion that the latest techno economic study that was conducted proves, meaning that all three options are equally competitive, so what remains is to make the corresponding decisions. In any case, EastMed is absolutely a competitive project and is in the game.

14. Could Greece's acquisition of the role of the energy transit hub mean its promotion to a comparable regional power as well? What are the obstacles and weaknesses that the country has to overcome in order to reach to that phase?

Charalampos Pippos: The promotion of Greece to a comparable regional power in the wider region, if she becomes an energy transit hub, is considered a fact, provided that besides the implementation of important goals for further diversification and reinforcement of energy sources and transit routes, the international and European commitments of the country for overcoming the current period of strict austerity, recycled recession and high unemployment, due to the economic crisis and memorandums will be also met, through the unfaltering promotion of the necessary structural and modernization changes, the consolidation of a favorable investment environment and the continuation and further deepening of its multilateral regional economic partnerships, especially with the countries of the Western Balkans, the

Black Sea and the SE Europe, with Israel and in the framework of the "Unity for the Mediterranean" (http://ufmsecretariat.org/).

Also, according to the regional policy that the Ministry for Foreign Affairs is exercising (http://www.mfa.gr/exoteriki-politiki/periferiaki-politiki/): "Greece is in a particularly geostrategic location: at the low end of the Balkan Peninsula, where the process of the European integration is still in progress, at the marine crossroad of the Eastern Mediterranean that it has been the communication bridge-commercial and spiritual-with the Middle Eastern world since the ancient times and at the geographical outline of a critical area, where all the large routes are being planned, which will ensure the sufficiency of energy resources for Europe, the Black Sea and the Caucasus. With these regions, Greece is not continued just geographically. The Greek presence has deep historical and cultural routes and is still obvious everywhere, on political and economic terms. For that reason, Greece is developing and applying a coherent regional policy, whose ultimate purpose is the consolidation of peace and security and the expansion of prosperity to its immediate region".

The strict adherence of this regional policy of Greece, is certain that will yield the expected results to achieve its goal.

Constantinos Filis: Greece needs to be stable, as we mentioned earlier, needs a stable tax environment, needs to provide motives to the investors, and has to remain in the narrow core of the EU and continue to be a predictable country, meaning to not create any insecurity to the investors. From then on, if the above-mentioned projects are to go further, Greece could then become a force to be reckoned as far as the transit of the product is concerned. If things go as good so that Greece can also become able to produce energy and in fact in significant quantities for the European standards, which I find very hard, then sure our power will definitely increase.

Giannis Maniatis: The answer is yes. The obstacles and the weaknesses are the well-known obstacles and weaknesses of a Greece that needs to comprehend that as far as the matters of energy diplomacy and energy strategy is concerned, the national strategy cannot change every time that the government changes or every time the ministers change. The fastest we comprehend that the better for our country. Thereafter, of course other issues (tax, political, judicial) are, of course, affecting a big investment, such as an investment in hydrocarbons or a pipeline. If we take a look

at the course over time, we in 2010 to 2014, within 4 to 5 years overcame all those problems, but you need a current institutional framework, an attractive tax environment, you need a liable public body that will be in constant communication with the investor, a public body that will be in constant communication with the local communities and resolve any negative reactions that may rise without justification, an austere institutional framework, consistency and continuity, so that the investor can feel safe and that there is no temporariness in this country, but stability. These are the most important weaknesses we are facing with all the large investments in our country, but if we deal with them, Greece will move in faster pace, regardless memorandums and internal weaknesses, but with optimism and pride towards the rest of the world and will also understand how important the development of its geopolitical position can be.

15. To what extent does the non-delimitation of an EEZ prevents Greece from becoming an energy transit hub (which projects)?

Charalampos Pippos: There does not seem to be a particular problem that connects Greece's already planned transformation to an energy transit hub, through the important energy projects of common interest that are being already steadily promoted- and with a communal co-financing-, with whichever pending issues there are relevant to the country's EEZ.

Besides, there must be highlighted at this point that the EEZ related issues are issues of "high politics", for which the Ministry of Foreign Affairs is competent and has been taking care of overtime, firmly and unwaveringly towards their final resolution and based on the national and communal law, as well as the international agreements and primarily the International Treaty of the Law of the Sea, which Greece has signed.

Specifically, with regards to the Greek-Turkish relations, the Ministry of Foreign Affairs, among other things, considers that: "The smoothing and improvement of the Greek-Turkish relations, besides their importance on a bilateral level, is also an important factor for stability in the SE European and the Eastern Mediterranean. Greece attaches great importance to the respect of the principle of the good neighborliness- which is, after all, a pillar for the European integration process- and makes every possible effort towards its consolidation and foundation. For Greece,

the conversion of the Greek-Turkish relationship from confrontational to cooperative, has been a constant pursue. For that reason, Greece tends a hand of friendship to Turkey, inviting Turkey to cooperate, with a consensual and constructive spirit, as appropriate for neighbors, for the complete smoothing of the Greek-Turkish relations" (http://www.mfa.gr/zitimata-ellinotourkikon-sheseon/).

Besides, within this framework of fixed special interest that the Ministry is giving to the unobstructed and nationally beneficial promotion of the energy matters, among others, on Wednesday May 10th and at 12 o'clock, the National Council of Foreign Affairs shall be convened, under the presidency of the Minister of Foreign Affairs, Nikos Kotzias. The main issue which the Council will be concerned with is the developments on the energy field. The meeting will also attend the Minister for Energy and the Environment, George Stathakis (http://www.mfa.gr/epikairotita/eidiseis-anakoinoseis/sugklese-ethnikou-sumbouliou-exoterikes-politikes-upeks-10052017.html).

Constantinos Filis: No, it does not prevent Greece to become an energy transit hub, because even without the delimitation of the EEZ, Greece as we speak, can go along with the EastMed project, as all the other planned projects are on land. The submerged piping or cables do not require the delimitation of an EEZ. Therefore, the answer is that Greece can go forward with that project without having delimited its EEZ. Now, it is always best if the maritime boarders are delimited, however this does not interfere at all with the above-mentioned prospect. Actually, the EEZ has absolutely nothing to do even with the exploitation of the hydrocarbon reserves.

Giannis Maniatis: The EEZ is a great national priority for every Greek government, but when we are going to declare our EEZ is determined based on the national priorities and is in the competence of the Prime-Minister, the Minister of Foreign Affairs and the Council of Ministers. We already have the very positive fact that the international law in relation with the EEZ is in our favor, which is a significant conquest. Moreover, in 2012 with the law 4001 (Maniatis law), we managed to insert in the article 156 the wording for the mean equal-distance line for the EEZ, another important conquest. This conquest was followed by the publication in the official newspaper of the EU, of the map that included the hydrocarbon explorations plan for the Ionian Sea and the South of Crete, where we determined the reference area with three countries (Albania, Italy and Libya) using this exact

criterion. This article is also being used by the Greek Ministry of Foreign Affairs for its verbal announcements at the UN, every time that Turkey violates the Greek national territorial waters. Therefore, I want to believe that we are in a very good path towards that direction. Finally, it is known that the continental shelf is enough in order to go along with any hydrocarbon explorations, but always the matters of international law are complicated, therefore we are obliged to listen what the experienced diplomats have to say, who I personally trust a lot.

Conclusions

The questionnaire for the interviews was based on the main subjects that were approached by the researcher and according to the aims and objectives of the essay. To that end the questionnaire begins with a more general question concerning energy, in order to establish whether the three interviewees opinion's would contradict or verify the general essence of the paper which was the significant importance of energy to international relationships and interstate affairs. By the answers of all three interviewees it is clear that they all recognize the immense importance of energy to IR and geopolitics. In continuation, the second question which relates to the RES is placed in order to examine if the importance of fossil fuels still stands for the EU, if we take under consideration the development of the RES. According to the interviewees, even though RES are the future, there are still many issues that need to be addressed, therefore they are not yet in position to replace fossil fuels and so fossil fuels are still the most important energy source and will be for many years to come and RES will continue as additional sources until they can become the primary energy source.

In an effort to examine closer EU's energy agenda, the researcher aims to gather insight with respect to the EU energy target for a single European energy market, as the research showed (see chapter 3.2.4 example of Germany) that this target is extremely hard to achieve, due to each state's separate interests, no matter how positive intentions the member states may have. Here the interviewees opinions begun to differ. Mr. Pippos was quite modest, as he recognizes some issues that Europe has to overcome in order to reach that goal, however he states that this target is "gradually but steadily promoted". The most realistic and as some would might say

pessimistic approach came from Dr. Filis, whose opinion is actually in line with the research. He supports that the states' interests cannot be set aside in order to achieve complete energy union and definitely cannot enforce the concept of the single energy market, so despite he recognizes that there is a convergence tendency, in reality it cannot exist. Mr. Maniatis' point of view on the other hand comes in complete contrast with Dr.Filis and the research, as he is the most optimistic and a visionaire. He truly believes this target and that Europe is on a very good path towards its achievement.

An important issue that preoccupied the researcher was the alternative options that the EU can utilize in order to achieve diversification as away from Russia as possible. Mr. Pippos presents the Caspian Sea as the best alternative option, the development of the Mediterranean gas and the increase of LNG supplies, but he mainly locates the solution to that issue through the implementation of policies that could lead to more diversification, such as the development of more interconnecting infrastructures, increase of the domestic energy production and coordination of national policies among others. His arguments are not contradicted by the other two interviewees, however they highlight more specific alternatives, that of Azerbaijan and the Mediterranean Sea, namely Israel, Cyprus and Egypt. Dr.Filis also ads Iran to his options and mentions that the Caspian Sea's quantities are in no position to replace Russia and concludes by stating that any alternative could only be used as a supplement to Russian supplies, but in no case can replace them, an argument with which Mr.Maniatis also agrees with, as well as the research itself.

In continuation, all three interviewees believe that the Eastern Mediterranean corridor could definitely become an ideal energy source for the EU. The EastMed which according to Mr.Pippos is a vital part of the Southern Gas Corridor is a very aspiring prospect and all three of them believe that Greece could definitely become a part of that prospect as a transit state. Only Mr.Maniatis however is optimistic as to whether Greece can provide additional quantities of hydrocarbons to that coalition, so he stresses the importance of further exploration in the Greek territory. On this matter, Mr.Maniatis was sparing when asked why so much delay and stagnation with respect to the exploration and exploitation projects in Greece, as during his Ministry at the Ministry of Energy and Environment he was very active and tried hard in order to commence such ventures, however there was no continuation to his work. He and

Dr.Filis locate the main issue to be the low oil price and of course the lack of incentives, which are vital when trying to attract such big investments. Other factors that were presented by the interviewees was the lack of political will as well as the known problems of the Greek state, indolence, bureaucracy and so forth. Again, Dr. Filis is very skeptical as to whether there are enough quantities in the Greek territory and if their exploitation is really worth it. When asked about the Aegean Sea, as the researcher aimed to make clear how much the disputes with Turkey affect the Greek state with respect to hydrocarbons, the replies varied. Mr. Pippos for example is optimistic that there are hydrocarbon quantities in the Aegean Sea, however due to the lack of the necessary data Mr.Maniatis believes that the Greek state should proceed to more surveys within its territory. On the other hand, Dr. Filis stresses the problematic relations with Turkey and doubts that there are enough quantities so as to worth risking the already vulnerable relation with the neighboring state. Indeed according to the research the Aegean Sea has no strong indications for the existence of more hydrocarbons than the already discovered, however it has come to the conclusion that political matters, such as the constant problems and disputes caused by Turkey, take away the Greek state's right to explore its territory, so as to not cause any more tensions, therefore the dissolution of those matters in accordance to the International Law is a key priority.

An issue that all interviewees agreed on was how profitable on many levels would be for the Greek state its entrance in the energy map as an energy producer, but as Dr.Filis points out only in case there are enough quantities to support the internal needs and also export and that this prospect would also benefit the EU and provide to the latter a safe supplier and a huge strategic advantage. The next question which relates to the current priority set by the Greek state, Dr. Filis differentiated from the other two interviewees, who believe that Greece should pursue at the same time its role as an energy transit state and its energy producer status. Dr. Filis believes that state's priority should be the most realistic one that of becoming an important transit hub, then examine the possibility of becoming a trading hub for natural gas and lastly look at its possibilities of becoming a producing state too.

According to the interviewees the 2020-2030 decade will be indicative of the course of Greece as an energy transit hub, when considering the projects that are planned or already in progress. Mr.Pippos however had no comment as to whether

this prospect can be affected by Turkey and its policies, but Mr. Maniatis showed his belief that Turkey is the one that needs to comply with the International Law. Dr. Filis, explained that it is not necessary that Greece will be affected by Turkey in any way as long as both states are stable as well as the rest of the region and as long as the state provides motives and advertise itself correctly. However, this role will be a lot strengthened and established if the EastMed project eventually passes through Greece and not Turkey, which are the two options and all three interviewees give the comparative advantage to Greece for multiple reasons and think of Greece as a safer transit hub for Europe, however Dr.Filis once again highlights the need of the two states to be on good terms with each other, in order for all the projects to succeed.

Further, Mr. Pippos states that in case Greece becomes an important energy transit hub the state's promotion to a comparable regional power is a fact, provided that Greece will overcome the internal weaknesses that keep the state vulnerable and that a coherent regional policy towards keeping the region stable will keep being applied. The other two interviewees also mention the stability that has to exist in the region and the state itself, but highlight a bit more the internal weaknesses that the state has to address, such as the tax environment, the investments' motives that the state has to provide, Dr. Filis specifically states that Greece has to "continue to be a predictable country" and Maniatis really highlights the need for stable policies throughout the Greek institutions, but only under these circumstances Greece can be optimistic as to becoming a comparable regional power.

Finally, the last question posed by the researcher basically aimed to clarify a misunderstanding that during the last years has been fairly discussed in Greece, that is whether the delimitation of the Greek EEZ could obstruct the Greek plan of becoming an energy transit hub through the development of certain projects, all three interviewees with clarity and certainty gave a negative answer. In fact as Maniatis states 'the continental shelf is enough" and Filis clarifies that "the EEZ has absolutely nothing to do even with the exploitation of the hydrocarbon reserves.

Generally, the outcome of the interviews is assessed by the researcher to be very positive and all the research questions were approached during the interviews. More specifically, the main objective of the essay, that of emphasizing the importance of energy in the IR and geopolitics has been clearly verified by the three interviewees. Secondly, with regards to the research questions, very interesting approaches have

been made, for instance that Greece is on the road and has good potential of becoming an important energy transit hub, especially with the developments that are taking place in the Eastern Mediterranean, even though its future as an energy producer, as the differentiation of the answers of the three interviewees shows, is blurry, as the research also proposes.

Chapter 5

Summary

The fifth and final chapter aims to summarize the key subjects that were approached by the researcher, collect the conclusions of each chapter in correlation with the information that was gathered during the interviews and make some conclusive remarks.

Summarizing and conclusive remarks

One of the main targets of this study was to underline the significance of energy and the huge impact it has on states and their well-being (economy, industry, production etc.) - a significance that all interviewees, namely Mr. Charalampos Pippos, Mr. Giannis Maniatis and professor Konstantinos Filis, also admit and support that it is of many different dimensions - their relations, their geopolitical prestige and international appeal. To that end a brief approach to the core ideas of international relations was necessary, meaning geopolitics and globalization, in order to understand their interwined relationship to energy. Further, it has been deemed necessary to examine the concept of energy security and energy dependence, which highlight more the value of energy in international relations. Therefore, energy can lead to dynamic alternations to states that own, produce but also consume energy, as well as the ones that are used as transportation routes.

Subsequently, the paper examined the hydrocarbons closer, as being the dominant energy sources of the 21st century, it would help us understand the processes and preconditions that have to exist in order for a hydrocarbon reserve to be considered exploitable. We also made a distinction between natural gas and oil from coal, due to their higher geopolitical significance and the smaller impact they have on the environment, due to their cleaner character when compared to coal.

Fossil fuels are European Union's main energy source as well and energy is a core priority for the Union, because its internal needs are high, unlike its production which is very low. That means that the Union is also very dependent on energy imports and it is one of the largest energy importers globally and its largest energy supplier is Russia. EU's limited supplier spectrum, along with a number of factors, is

what exemplifies the Union's dependency on Russia and its overall insecurity. This situation became even more apparent when the Ukraine crisis erupted and pushed the member-states to think further in terms of energy security. Main targets of the new European Energy Policy, more energy security through diversification of sources, more environmentally sustainable energy mixes and a more unified and competitive European energy market through deeper cooperation and more infrastructures. According to the interviewees, Europe is on a good path towards its targets, especially towards a more environmentally friendly energy mix through the wider use of the RES, however the level of their optimism differ in relation to how achievable it is to reach the most important European target, that of becoming a real Single Energy Market, for instance, it became clear from the interview with professor Filis that a real single energy market is extremely difficult to achieve, due to the conflicting interests of the member-states.

Currently, EU's alternative options to Russia in the basis of more diversification away from Russia and thus more energy security are very limited. The prevailing alternative is Azerbaijan, however the natural gas quantities are rather small and cannot offer a significant change to the Union's current energy policy agenda and according to the interviewee professor Filis Azerbaijan cannot even compete with Russia, quantitatively speaking, since the latter produces almost 640 bcm of natural gas per year, while Azerbaijan produces 20-25 bcm. One new and aspiring prospect, however could be the Eastern Mediterranean. A much safer and stable solution for the Union, however without the adequate quantities as well. With such limited alternative options, Europe is not projected to significantly lessen its reliance on Russia, however the availability of more supply options creates an overall safer environment.

In this context, Greece could also play a part and provide complementary quantities to the Eastern Mediterranean cooperation by exploiting the potential reserves that lie in its subsoil and subsea. Again, the interviewees' optimism with regards to whether Greece can become a state that produces and exports energy products differ, as unlike Mr. Maniatis and Mr. Pippos, Mr. Filis is more skeptical with regards to Greece's potential, mainly due to the insufficient data that we have until now.

Even though the Greek exploratory program was not very successful in the past, the reasons for that were primarily technical and political. However, as soon as researches were intensified the results were positive leading to the discovery of deposits (Prinos, South Kavala etc.). Moreover, according to the experts, who have been very vocal during the last years, studies show that Greece holds more oil and gas deposits in many different target areas that certainly need to be further explored. The experts indicate several areas as high priority areas, including the Southern and Western Crete marine area, the Central and North Ionian Sea, the Gulf of Patra, Ioannina and Western Katakolo. Of course, there could be more targets located at the Aegean Sea, however due to the unresolved matter of the continental shelf with Turkey, this area remains undiscussed and indeed, it became clear from the interview with Mr. Maniatis that there are strong, proven indications that Greece has deposits in the Ionian Sea and in the South of Crete, but the indications are far less for the Aegean Sea, which has not yet, of course, been sufficiently explored.

Greece is not the only one aspiring to become an energy transit hub for Europe, Turkey is also claiming that role. Ever since Russia begun to be characterized as an unreliable supplier, emphasis was given to the Caspian Sea and Turkey as an important alternative for Europe. The role of Turkey had indeed changed a lot thanks to the reformer president Erdogan (2003-5), who was looking forward to the democratization of Turkey and made Europe and the United States to view the former as a valuable partner. Therefore the role of the energy transit hub that was destined for Turkey was a reasonable outcome of the overall environment at the time, as it would bring Turkey closer to Europe and it was supposed to be a reliable alternative to Russia and a predictable one. For Turkey this role would have both economic and of course geopolitical gains. However, a lot of controversy was raised over this new role that Turkey was supposed to acquire. The main questions that were arising, a) whether a new Ukraine was being born and b) why create a new dependence especially with a country outside the European sphere, therefore not imposed to the European energy norms, both very strong arguments that currently are strengthened by the overall situation and instability that prevail during the last years in Turkey. Even so, Turkey still remains a high priority and is considered as a strong solution to the diversification effort of the EU.

Currently, another sensitive issue has come up that rekindles the competition between Turkey and Greece. Cyprus in hopes of reaching to a resolution to its long lasting problem with Turkey, appears to promote a new argument in order to lure Turkey to finally reach to an agreement. According to this new argument Turkey can be the transit country from where the natural gas reserves from the Eastern Mediterranean would reach to Europe. This argument is obviously leaving Greece outside of any future energy plans and places Turkey to a power position. However, there are many drawbacks regarding this option. First of all, Turkey has an internal structural problem when it comes to pipeline infrastructure. The country is not properly interconnected but it is divided into four. That means that in order to use Turkey as a transit country, a whole new network would have to be constructed, that would cross the inland of Turkey and connect Turkey to Bulgaria in order to finally reach Europe. This is a particularly unattractive solution economically speaking, especially when compared to the competing project, the EastMed, as at the moment there are not enough natural gas quantities in order to justify both projects and technically speaking it is not that easier to construct. Furthermore, Turkey is paying very high prices for the natural gas that it imports and buying its natural gas from Cyprus and Israel would be a much more affordable solution, due to their proximity as well as a more economically viable solution for the latter, therefore it is questionable whether Turkey should be used as a transit country or just as a buyer.

Greece's position with respect to the way Cyprus has selected to approach Turkey is very awkward, as the former cannot exercise pressure to Cyprus in order to drop this argument due to the sensitivity of that issue (Fillis, 2017). In terms of energy policy Greece and Cyprus do not really converge, as Cyprus prefers to harmonize its relations with Turkey, become a supplier of the Turkish market and this way ensure their future relations and security. On the other hand, the plan that seems to prevail at the moment among the Eastern Mediterranean states that will cooperate is threefold (Karagiannakos, 2017), which means that the risk will be partitioned better. They are discussing for approximately 25 to 30 bcm of exportable natural gas on a twenty years basis that will 1) supply the small neighboring markets (Jordan, Palestine) as well as the bigger Turkish market, with a total of 8 bcm, 2) Egypt and 3) the East Med. Of course at the moment and due to the high extraction cost none of these projects is very appealing, even though the expectations are indeed high and the presence of big

international companies there (Total, ExxonMobil etc.) verifies that, due to the very low oil prices. Therefore, in order for the extraction activities to begin and the discussions begin to flourish the dropping of the Brent prices is a precondition.

To look even further, Greece being, as already mentioned, a member-state of the EU, but also a stable and secure state within a very problematic region, can potentially become a stabilizing factor in that area and possibly in the future even become a regional power as well. Currently, upgrading Greece's role to an important energy transit hub of South-Eastern Europe is a basic strategic target of the Greek state, for the achievement of which many systematic efforts have taken place over time by the Greek governments. The geostrategic value of Greece, along with the natural gas reserves located in the Eastern Mediterranean are expected to play a vital role to the future developments, as well as in overcoming the economic crisis and therefore assist to the economic recovery of the country (Pippos, 2016).

Certainly, Greece has been left very far behind with respect to the exploration for hydrocarbons and in fact, apart from the unresolved continental shelf dispute, Greece still remains the only country within its region that maintains the minimum territorial waters (6 n.m.). Turkey's unwillingness to cooperate in order to reach to a solution has also an impact to the delimitation of the Greek EEZ, not only with Turkey but with most of its neighboring countries too, each one for different reasons. Nevertheless, one of the basic conclusions of this study is that the delimitation of an EEZ is not a necessity in case Greece wants to exploit its possible hydrocarbon reserves or move forward with the laying of an underwater pipeline (EastMed) or a cable, as the continental shelf regime alone gives to the state the right to do so, unless the reserves extend beyond that, however the EEZ does provide further legitimation to the state.

Another very interesting point is the Greek gas market and its continuing expansion trend. Investments are still taking place, important projects are being planned and executed, despite the bad financial condition of the country. The natural gas market of Greece in accordance to the European gas market is being liberalized and soon Europe and consequently Greece will enjoy different, possibly more favorable prices than the present.

Moreover, through the expansion of the Greek infrastructure abilities and its geostrategic position, Greece is facing another opportunity, which all interviewees also agree that the Greek governments have been strongly support and pursue for some years now. Greece can become an important energy transit hub for the European Union, especially with regards to natural gas. Greece can provide many different entry points as well as export routes for natural gas, using both the LNG and the pipeline option and therefore assist Europe's diversification effort even more and most importantly by providing more stability and security of supplies, being a member-state. According to Mr. Pippos states that "The diversification of routes and sources of energy transit, through the already existing ones and the planned transit pipelines of natural gas, which are going through the Greek territory form the conditions, under which Greece, as the single country with a remarkable political stability and prospect of dynamic development within the wider region, can become a safe supplier and a strategic energy partner, not just for the EU, but for other neighboring countries of the wider region of the SE Mediterranean as well, contributing this way to the enhancement of prosperity and political stability, in this sensitive region of the world". In the future and considering Greece overcomes today's difficulties as well as its chronic systematic weaknesses could become a measurable power of that region. However, another very important factor to that end would also be the realization of the East-Med pipeline and of course, the normalization of the relations among the states in the region, in avoidance of any future problems (e.g. delimitation of EEZ), for instance as professor Filis reports "Greece, has to continue to be a stable country, but also want the surrounding region to be stable as well, since for instance we do not have anything to gain from the Balkan crises, because if we consider the vertical axis that are to be constructed, the crises also affects Greece's position".

Furthermore, Greece is already promoting projects, all approved by the European Commission, that can assist its status transition to an energy transit hub. For instance, the TAP pipeline is already under construction, the already existing LNG terminal is being upgraded in order to be able to receive larger quantities and the East-Med's pre-feasibility and feasibility studies had both very positive results.

Finally, Greece also seems to have the edge over its main competitor for the acquirement of the energy transit hub status, Turkey, especially after the recent instability that Turkey has showcased. Turkey begun to lose its edge when its relation

with Russia was shaken and the construction of the South Stream was put on hold. Then, due to the fact that the quantities that Azerbaijan can provide are not as expected, but much less, the pipeline through Turkey does not offer after all a significant alternative. In addition to that, many believe that Turkey is not a very safe, stable and reliable partner anymore and the creation of a "Ukraine of the South" and a second dependence is not a very wise choice for the Union, Mr.Maniatis characteristically mentions with regards to Turkey that Europe should "not put all their eggs into one basket and especially when it comes to a country with such a high country risk". In terms of becoming the transit route for the natural gas of the Eastern Mediterranean, again Turkey does not have a comparative advantage, as the project is not as cost-efficient as the defenders of the project advertise it to be and in fact, in comparison to the East-Med it is neither easier technically-wise, nor economically more viable than the latter.

Triggering point of this research was the overall lack in literature with regards to Greece, its hydrocarbon reserves and the prospects that were opening up for Greece after the Eastern Mediterranean discoveries, so main goal was to fill in this gap, but also to create new questions through the in depth analysis. Another contribution of this research was that good information was provided with respect to the EU and its options energy-wise, since its energy security issue is a timeless matter and also clarifies those options for the reader. The primary material that is the semi-structured interviews constitute valuable material, due to the interviewees status, knowledge and due to the fact that they came from people who have been actively involved in the thematic work of decision-making, therefore not just a product of literature review and actually verify the findings of this research. The fact that data on the subject matter change constantly because it is an on-going condition, can not only provide food for thought to policy-makers but also trigger more researchers to try and continue on the research.

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Interview 2017 Pippos Charalampos, Honorary Director at the Ministry of Environment and Energy, Energy and Natural Resources Expert, (Vol) Scientific Collaborator of the Institute of Research and Training on European Affairs:

www.irtea.gr, Former National Representative in EU and International Energy Institutions, Former Chairman of the Energy Group of the EU Council (1st semesters of 2003 & 2014)

Interview 2017 Giannis Maniatis, Greek politician, a member of the Pan-Hellenic Socialist Movement (PASOK) since 2004 and was Minister for the Environment, Energy and Climate Change (2013-15)

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Appendix : Interviews with Charalampos Pippos, Konstantinos Filis and Giannis Maniatis in Greek (Original Script)

1. Με ποιο τρόπο τα ζητήματα της ενέργειας επηρεάζουν τις σχέσεις ανάμεσα στα κράτη;

Στοιχεία απάντησης ερωτησης 1:

Χαράλαμπος Πίππος: Η ενέργεια είναι εξόχως δικτυακός τομέας, με εθνική, περιφερειακή, ευρωπαϊκή και διεθνή διάσταση, αφού όλη η θεμελιώδης αλυσίδα λειτουργιών του (παραγωγή, μεταφορά, διανομή, αποθήκευση, εμπορία), προϋποθέτει, κυρίως, τη δημιουργία αγωγών (πετρέλαιο – φυσικό αέριο) και ειδικών καλωδιακών δικτύων διασύνδεσης (ηλεκτρισμός). Συνεπώς, για την ανάπτυξη της ενέργειας,, ιδίως στο σημερινό παγκοσμιοποιημένο περιβάλλον, απαιτείται η δομημένη συνεργασία και σύμπραξη των κρατών που διασυνδέονται, συνήθως πρώτα με πολιτικά μνημόνια συνεργασίας (memorandums of understanding) και ακολούθως με σχετικές διακρατικές συμφωνίες (intergovernmental agreements).

Κωνσταντίνος Φίλης: Η ενέργεια είναι ένα εμπορικό προιόν, που σημαίνει ότι υπό κανονικές συνθήκες, θα μιλούσαμε για ένα προιόν όπως είναι το λάδι, το σιτάρι κτλ, το οποίο εμπορεύονται τα κράτη μεταξύ τους με συνθήκες ελεύθερου εμπορίου ή ακόμη και κρατικού προστατευτισμού, όπως συμβαίνει με το εμπόριο και με την ανοιχτή αγορά και με το ποια κράτη δέχονται τους κανόνες ανοιχτής αγοράς ή όχι. Στην προκειμένη περίπτωση όμως, η ενέργεια, λόγω της σημασίας που έχει και η σημασία αυτή απορρέει από το γεγονός ότι κινεί όχι μόνο τα νοικοκυριά, αλλά και τη βιομηχανία, τις επιχειρήσεις και τη βαριά βιομηχανία, όποιων κρατών έχουν βαριά βιομηχανία, η ενέργεια λοιπόν ως εξ'αυτού έχει αποκτήσει μια διάσταση η οποία είναι πέρα της εμπορικής και είναι η διάσταση η γεωπολιτική, η διάσταση δηλαδή που σχετίζεται με τις διακρατικές σχέσεις. Εκεί, μπορούμε να κατηγοριοποιήσουμε τα κράτη σε τρία επίπεδα. Το πρώτο επίπεδο, είναι τα κράτη, τα οποία είναι πλούσια σε υδρογονάνθρακες, είναι δηλαδή πλούσια σε παραγωγή υδρογονανθράκων, είτε μιλάμε για φυσικό αέριο, είτε μιλάμε για πετρέλαιο. Η δεύτερη κατηγορία, είναι τα κράτη, τα οποία είναι σημαντικά, λόγω του ότι διαμετακομίζουν το προιόν, δηλαδή από το έδαφός τους περνούν έργα ενεργειακά και αυτά τα κράτη καθίστανται σημαντικοί διαμετακομιστές, δηλαδή μεταφέρουν το προιόν, όπως επί παραδείγματι η

Ουκρανία, ή όπως η Τουρκία, σε περίπτωση που προχωρήσουν τα σχέδια που αφορούν στο Νότιο Ευρωπαϊκό διάδρομο, και υπάρχει και μια τρίτη κατηγορία κρατών, που είναι αυτά τα οποία είναι οι πελάτες, είναι οι αγοραστές, χωρίς να έχουν κάποια άλλη δυναμική, είτε δηλαδή να παράγουν είτε να διαμετακομίζουν, παρά μόνο καταναλώνουν, είναι δηλαδή τα κράτη καταναλωτές. Ασφαλώς, υπάρουν συνδιασμοί, δηλαδή μπορεί να έχουμε ένα κράτος, το οποίο να είναι σημαντικός καταναλωτής και ταυτόχρονα διαμετακομιστής, βλέπε Τουρκία, η οποία είναι μια χώρα 80 εκατομμυρίων, με μια δειψασμένη αγορά, είναι μια χώρα η οποία είναι και σημαντική αγορά για την ευρύτερη περιοχή της Μέσης Ανατολής και της Ανατολικής Μεσογείου, αλλά είναι και σημαντικός διαμετακομιστής, ειδικά σε περίπτωση που περάσουν διάφορα έργα από το έδαφός της. Άρα λοιπόν, είναι οι τρείς κατηγορίες αυτών των κρατών και συνδυαστικά μπορεί να υπάρξει κάτι περισσότερο. Τώρα η σημασία, συνίσταται στο ότι τα κράτη τα οποία κατέχουν το προιόν θα μπορούσαν να χρησιμοποιήσουν – αύτο συνέβαινε βέβαια περισσότερο στα παλιότερα χρόνια, γιατί πλέον υπάρχει ένα πλεόνασμα προσφοράς, άρα δεν είναι τόσο μεγάλο το πρόβλημα, αλλά ακόμα και σήμερα, αν υποθέσουμε ότι ένα-δύο μεγάλα κράτη ή ο ΟΠΕΚ, ας πούμε στο πετρέλαιο, αποφάσιζαν να ελέγξουν τη ροή του πετρελαίου, αυτό θα δημιουργούσε πρόβλημα στα κράτη τα οποία καταναλώνουν το προιόν, χωρίς να έχουν άμεση πρόσβαση σε αυτό- την ενέργεια, είτε την παράγουν, είτε τη διαμετακομίζουν, προκειμένου να προωθήσουν και άλλου τύπου συμφέροντα, τα οποία δεν σχετίζονται αποκλειστικά με την ενέργεια αλλά είναι ευρύτερα στρατηγικά συμφέροντα μιας χώρας.

Γιάννης Μανιάτης: Τα θέματα της ενέργειας αποτελούν έτσι κι αλλιώς ένα σημαντικό μέρος του σκληρού πυρήνα και της εξωτερικής πολιτικής του κάθε κράτους αλλά και της οικονομικής και αναπτυξιακής διάστασης. Αυτό σημαίνει λοιπόν ότι η ενεργειακή διάσταση, πάντα, αποτελεί ένα σημαντικό παράγοντα στο πως διαμορφώνονται οι γεωπολιτικές ισορροπίες, οι γεωπολιτικές ανισορροπίες και την ίδια στιγμή πως διαμορφώνεται και το παραγωγικό μοντέλο του κάθε κράτους. Βλέπουμε για παράδειγμα ότι διαχρονικά τα κοιτάσματα υδροονανθράκων αποτελούσαν και συνεχίζουν να αποτελούν εστίες έντασης, πολέμων και εμφυλίων αναταραχών, ενώ βεβαίως και τώρα τελευταία η εξέλιξη των αγωγών έχει δημιουργήσει νέες συνθήκες και νέες παραμέτρους, μέχρι τώρα είχαμε μόνο τον εντοπισμό των κοιτασμάτων, τα οποία προσδιότιζαν τις γεωπολιτικές ισορροπίες και

τις περιφερειακές συνεργασίες, τώρα υπεισέρχεται ένας ακόμα παράγοντας και αυτός είναι η διέλευση των αγωγών φυσικού αερίου, που σημαίνει ότι μπαίνει μια ακόμα παράμετρος.

2. Οι υδρογονάνθρακες αποτελούν την κύρια πηγή ενέργειας των κρατών της Ευρώπης σήμερα. Με βάση τους νέους ενεργειακούς στόχους της Ένωσης πιστεύετε ότι μπορεί και πόσο σύντομα να αλλάξει αυτό υπέρ των ΑΠΕ;

Στοιχεία απάντησης ερώτησης 2 :

Χαράλαμπος Πίππος: Στους επίσημους συμφωνημένους στόχους της Ενεργειακής Ένωσης (http://www.consilium.europa.eu/el/policies/energy-union/), περιλαμβάνονται, εκτός από την προτεραιότητα στην ενεργειακή απόδοση, την πλήρως ενοποιημένη ενεργειακή αγορά, την έρευνα, καινοτομία και ανταγωνιστικότητα, τον "καθαρισμό" της οικονομίας από τον άνθρακα (δηλ. μείωση ρύπων που προκαλούν το "φαινόμενο του θερμοκηπίου", με προώθηση, κυρίως, των περιβαλλοντικά φιλικών ανανεώσιμων πηγών ενέργειας (ΑΠΕ) και -μεσο-μακροπρόθεσμα- και άλλων "καθαρών" εναλλακτικών καυσίμων, όπως, ενδεχομένως, το υδρογόνο και η πυρηνική σύντηξη), η ενεργειακή ασφάλεια, η αλληλεγγύη και η εμπιστοσύνη, αποτελούν ένα ακόμα βασικό κοινοτικό στόχο. Ειδικά η ενεργειακή ασφάλεια προϋποθέτει συνέχιση της λελογισμένης χρήσης συμβατικών καυσίμων, παράλληλα με την περαιτέρω δυναμική ανάπτυξη των ΑΠΕ και της ενεργειακής απόδοσης, λόγω της υψηλής εξάρτησης της Ευρωπαϊκής Ένωσης από εισαγωγές υδρογονανθράκων (πετρελαίου και φυσικού αερίου από τρίτες χώρες). Συγκεκριμένα, οι συμφωνημένοι μεσοπρόθεσμοι συνολικοί ρεαλιστικοί κοινοτικοί στόχοι για ΑΠΕ και ενεργειακή απόδοση είναι 20% αύξηση το 2020 και 27% το 2030, έναντι του 1990, αντίστοιχα, οι οποίοι προβλέπεται να κατανεμηθούν με ευελιξία στα κράτη - μέλη, αναλόγως των δυνατοτήτων τους. Παράλληλα, επειδή:

- αφενός σήμερα πάνω από το 50% των ενεργειακών αναγκών της Ε. Ένωσης καλύπτονται από εξωτερικούς προμηθευτές, με διαρκή αυξητική τάση (με βάση βεβαιωμένα κοινοτικά στοιχεία το 2012 σχεδόν το 90% του πετρελαίου, το 66% του φυσικού αερίου και το 42% των στερεών καυσίμων που καταναλώθηκαν στην Ε. Ένωση προέρχονταν από εισαγωγές και είχαν κόστος πάνω από 1 δισεκ . Ευρώ την ημέρα) και

• αφετέρου οι βασικές ΑΠΕ (αιολική και ηλιακή ενέργεια), έχουν "στοχαστικό χαρακτήρα", που σημαίνει ότι η παραγωγή ενέργειας από αυτές εξαρτάται από τις συνεχώς μεταβαλλόμενες συνθήκες ανέμου και ηλιοφάνειας, η αναγκαία διαχρονικά σταθερή παραγωγή και μεταφορά ηλεκτρισμού στα δίκτυα (δηλ. σταθερή τάση και συχνότητα του ρεύματος για αποφυγή "black outs"), απαιτούν, από τεχνικής πλευράς, σε μεσο-μακροπρόθεσμη βάση, συνδυασμένη χρήση πλέον περιβαλλοντικά φιλικών συμβατικών καυσίμων (κυρίως φυσικού αερίου, ως το περιβαλλοντικά φιλικότερο εξ αυτών), με ΑΠΕ και Ενεργειακή Απόδοση, σε εθνικό, κοινοτικό αλλά και διεθνές επίπεδο.

Συνεπώς, το ενεργειακό ισοζύγιο των κρατών-μελών της Ε. Έ. θα αλλάξει προϊόντος του χρόνου με διαρκή λελογισμένη αύξηση των ΑΠΕ, σε συνδυασμό, όμως, με την αναγκαία συνέχιση και σταδιακή αύξηση της χρήσης λιγότερο ρυπογόνων συμβατικών καυσίμων, όπως το φυσικό αέριο και το υγροποιημένο φυσικό αέριο για την σταθερότητα , αξιοπιστία και βιωσιμότητα του ενεργειακού συστήματος.

Κωνσταντίνος Φίλης: Οι ΑΠΕ, έχουν μια δυναμική, ασφαλώς υπάρχει μια διάσταση περιβαλλοντική, υπάρχει μια διάσταση πολιτική, υπάρχει μια διάθεση στροφής μεν στις ΑΠΕ, αλλά οι ΑΠΕ, έχουν κάποια προβλήματα, τα οποία σχετίζονται και με το ότι δεν παράγονται πολλές θέσεις εργασίας στο επίπεδο της παραγωγής, δεν μιλάμε για την κατασκευή, ότι είναι ακριβές ακόμα στην παραγωγή και την μεταφορά τους, ότι υπάρχουν αντιδράσεις από τοπικές κοινωνίες, ότι υπάρχουν αντιδράσεις από άλλα συμφέροντα τα οποία υποδαυλίζουν εντάσεις μέσα στις κοινωνίες. Αυτό το οποίο μπορούμε να πούμε είναι ότι υπάρχει μια φθίνουσα πορεία για το πετρέλαιο, υπάρχει μια δυναμική σημαντική για το φυσικό αέριο, που είναι μια ακόμα πιο καθαρή μορφή ενέργειας, σίγουρα το μέλλον είναι στις ΑΠΕ, αλλά σε ένα βάθος είκοσι ετών από σήμερα οι ΑΠΕ δεν μπορούν να υποκαταστήσουν τα ορυκτά καύσιμα, μπορούν να παίξουν ένα συμπληρωματικό ρόλο και νομίζω αυτό ισχύει και για την ΕΕ. Τέλος, οι ΑΠΕ ακόμα παραμένουν επιδοτούμενες σε μεγάλο βαθμό και αυτό είναι κάτι που σε σχέση με τους Ευρωπαϊκούς κανόνες φαίνεται να επηρεάζει αρνητικά την κατάσταση, γιατί υποτίθεται ότι πρέπει να περιοριστούν για να μην πω να εκμηδενιστούν οι κρατικές επιδοτήσεις που δίνονται για τις ΑΠΕ.

Γιάννης Μανιάτης: Με βάση τους στόχους του 2020-30 και με βάση βέβαια πάντα την κεντρική μας στόχευση ως το 2050, η Ευρώπη έχει εξαιρετικά φιλόδοξους φιλο-

περιβαλλοντικούς στόχους, νομίζω ότι η Ευρώπη αποτελεί έτσι κι αλλιώς τον πιο φιλόδοξο παγκόμιο παίκτη και η μέχρι τώρα εμπειρία ή τουλάχιστον η μέχρι τώρα πολύ καλή προσέγγιση που έχουμε κάνει στα θέματα του 2020 δείχνει ότι η Ευρώπη είναι αποφασισμένη να συνεχίσει να έχει την παγκόσμια πρωτοπορία σε αυτά τα θέματα. Η δική μου εκτίμηση είναι ότι οδεύουμαι πια στο επίπεδο της Ευρωπαϊκης Ένωσης των κρατών-μελών προς οικονομίες που θα έχουν ως βασικό ενεργειακό συστατικό το φυσικό αέριο και όλο και περισσότερο ασφαλώς τις ΑΠΕ. Εδώ λοιπόν η ενεργειακή ένωση που αποτελεί το νέο ενεργειακό όραμα της Ευρώπης έτσι όπως αυτό έχει διαμορφωθεί στα τέλη του 2014-15 αποτελεί τον οδηγό για όλα τα κράτη-μέλη. Εδώ θέλω να σημειώσω ότι είναι πραγματικά η συμμετοχή κατά 27% των ΑΠΕ στο ισοζύγιο των κρατών-μελών ενόψει του 2030, η συμμετοχή του φυσικού αερίου με την δημιουργία νέων υποδομών και με τη δημιουργία των ελλειπουσών συνδέσεων ανάμεσα στα δίκτυα διανομής φυσικού αερίου ανάμεσα στα κράτη-μέλη, η δημιουργία νέων υποδομών για το LNG, το οποίο πια τα τελευταία χρόνια αποτελεί όλο και μεγαλύτερη πηγή τροφοδοσίας των κρατών-μελών, όλα αυτά συνηγορούν στο ότι αρχίζουμε και οδεύουμε προς μια Ευρώπη αειφορική.

3. Μέρος των ενεργειακών στόχων της ΕΕ είναι επίσης η δημιουργία μιας ενιαίας Ευρωπαϊκής και ανταγωνιστικής αγοράς. Πόσο κοντά πιστεύετε ότι βρίσκονται τα κράτη-μέλη σε αυτό το στόχο; Υπάρχουν δείγματα μη σύγκλισης προς το στόχο αυτό;

Στοιχεία απάντησης ερώτησης 3:

Χαράλαμπος Πίππος: Κύρια στοιχεία της κοινοτικής στρατηγικής για τη δημιουργία μιας πραγματικά ενιαίας και ανταγωνιστικής ευρωπαϊκής αγοράς ενέργειας είναι η διαφοροποίηση του εξωτερικού ενεργειακού εφοδιασμού, η αναβάθμιση των υφισταμένων ενεργειακών υποδομών, η θεσμική ολοκλήρωση της εσωτερικής αγοράς ενέργειας, σύμφωνα με τις σχετικές κοινοτικές οδηγίες και κανονισμούς, οι ΑΠΕ και η Ενεργειακή Απόδοση και Εξοικονόμηση Ενέργειας. Παρά τις όποιες διαφορές σύγκλισης μεταξύ των κρατών μελών, οι οποίες, οφείλονται, εν πολλοίς, στο διάφορο βαθμό ανάπτυξης των απαιτούμενων ενεργειακών υποδομών καθώς και στις εκάστοτε ισχύουσες εθνικές πολιτικές και οικονομικές συνθήκες και δυνατότητες, η σύγκλιση των αγορών προωθείται σταδιακά, αλλα σταθερά σε επίπεδο Έ. Ένωσης.

Κωνσταντίνος Φίλης: Για να υπάρξει μια ενιαία και λειτουργική αγορά, θα πρέπει πρώτον να υπάρχει διασύνδεση μεταξύ των κρατών μελών, είτε φυσική διασύνδεση, είτε διασύνδεση εικονική, που σημαίνει δηλαδή ότι θα πρέπει η Νοτιοανατολική Ευρώπη να είναι περισσότερο διασυνδεδεμένη με την Κεντρική Ευρώπη, της οποίας η αγορά είναι πιο ώριμη και της οποίας η αγορά έχει μεγαλύτερο πλουραλισμό προμυθευτών. Η ενιαία αγορά, είναι κάτι το οποίο πολύ δύσκολα μπορεί να επιτευχθεί, παρά το ότι αποτελεί στόχο και αυτό διότι τα συμφέροντα μεταξύ των 27 πλέον κρατών-μελών, σε πολλές περιπτώσεις είναι διαφορετικά και δυιστάμενα και απευθύνονται σε διαφορετικούς προμυθευτές, σύμφωνα με τα συμφεροντά τους και τα ενεργειακά αλλά και τα ευρύτερα στρατηγικά. Οπότε, δεν μπορείς να επιβάλλεις σε ένα κράτος να αποδεχθεί την έννοια της ενιαίας ενεργειακής αγοράς και γι'αυτό κιόλας η ενέργεια είναι ένα από τα θέματα στα οποία ακόμη οι αποφάσεις λαμβάνονται σε εθνικό επίπεδο και δεν λαμβάνονται σε κεντρικό επίπεδο από τις Βρυξέλλες, από τον υπερεθνικό δηλαδή οργανισμό που λέγεται ΕΕ. Οπότε, νομίζω ότι υπάρχει μια διάθεση σύγκλισης σίγουρα και μια διάθεση να κινηθεί η Ευρώπη απέναντι σε προμυθευτές με μια ενιαία γραμμή, αλλά εκ των πραγμάτων αυτό δεν μπορεί να συμβεί. Έχουμε το χαρακτηριστικό παράδειγμα τώρα, με το Nord Stream, ο οποίος είναι ο αγωγός που συνδέει τη Ρωσία με τη Γερμανία απ'ευθείας, υπάρχουν οι πρώτες δυο συνδέσεις που έχουν ήδη κατασκευαστεί και τώρα παρά το ότι υπάρχουν πολλές αντιδράσεις από πλευράς Ευρωπαϊκών χωρών, η Γερμανία, οι γερμανικές εταιρίες και όχι μόνο φαίνεται ότι απτόητες συνεχίζουν στην κατεύθυνση προς τη δημιουργία του δεύτερου δικτύου, Nord Stream 2. Αυτό δείχνει και επιβεβαιώνει ότι μπορεί να υπάρχει μια σύγκλιση μεγαλύτερη, μπορεί να υπάρχει μια διάθεση των συνδέσεων, των υποδομών και μιας ενιαίας γραμμής, αλλά είναι πάρα πολύ δύσκολο στα επόμενα χρόνια, στο προβλεπτό μέλλον να έχουμε μια ενιαία ευρωπαϊκή αγορά με ότι αυτό συνεπάγεται, γιατί η σύγκλιση αυτή θα πρέπει να γίνει και σε τεχνικό επίπεδο και σε επίπεδο κανονισμών (regulations), είναι πράγματα τα οποία δεν είναι καθόλου εύκολα.

Γιάννης Μανιάτης: Ο στόχος αυτός είναι πολύ σπουδαίος, πολύ σημαντικός, αποτελεί το νέο όραμα που είναι ακριβώς αυτή η ενεργειακή ένωση, ένα στάδιο, αφού καραφέραμε ως Ευρώπη και έχουμε την Ενιαία Νομισματική Ένωση, με κοινό νόμισμα, έχουμε την Ενιαία Τραπεζική Ένωση, τώρα πια περνάμε και στο τρίτο στάδιο, την Ενεργειακή Ένωση, η οποία θα μας δώσει την δυνατότητα να

αποκτήσουμε τη λεγόμενη Πέμπτη ελευθερία, δηλαδή, όπως μέχρι τώρα έχουμε στην Ευρώπη ελευθερία μετακίνησης προσώπων, αγαθών, υπηρεσιών και κεφαλαίων, οι τέσσερις ελευθερίες, τώρα πια με την υλοποίησης της Ενεργειακής Ένωσης έχουμε τη δυνατότητα να υλοποιήσουμε και την ελευθερία μετακίνησης ενεργειακών αγαθών και αυτό είναι κάτι πάρα πολύ σπουδαίο. Η Ευρώπη είναι σε καλό δρόμο προς αυτή την κατεύθυνση, μάλιστα τόσο ο επίτροπος Κανιέτε, όσο και ο αντιπρόεδρος της Ευρωπαϊκής Επιτροπής ο Μάρος Σέφτσοβιτς, ιδίως ο δεύτερος, το έχουν αναλάβει ως ένα προσωπικό project, το τρέχουν με μεγάλη ένταση, τα κράτη-μέλη συνηγορούν σε μεγάλο βαθμό, γι'αυτό είμαι αισιόδοξος ότι είμαστε στο δρόμο της σύγκλισης.

4. Η ΕΕ επιθυμεί την ενίσχυση της ενεργειακής της ασφάλειας μέσω περαιτέρω διαφοροποίησης των ενεργειακών της πηγών μακριά από τη Ρωσία. Ποιες είναι οι πιο ρεαλιστικές κατά τη γνώμη σας εναλλακτικές της;

Στοιχεία απάντησης ερώτησης 4:

Χαράλαμπος Πίππος: Μετά τις εξελίξεις στην Ουκρανία το 2009 και σε εκτέλεση σχετικών αποφάσεων του Ευρωπαϊκού Συμβουλίου Μαρτίου 2014, επί 5ης Ελληνικής Προεδρίας στο Συμβούλιο Ε.Έ., για την ανάγκη επίτευξης συγκεκριμένων μεσοπρόθεσμων και μακροπρόθεσμων στόχων όσον αφορά την ασφάλεια ενεργειακού εφοδιασμού, η Ε. Επιτροπή έχει ήδη προτείνει σειρά βασικών δράσεων σε διάφορους τομείς για τη περαιτέρω μείωση της ενεργειακής εξάρτησης από τη Ρωσική Ομοσπονδία, ως ακολούθως:

- Συμπλήρωση των κενών που υπάρχουν σε συνδέσεις υποδομών ζωτικής σημασίας για να αντιμετωπίζονται γρήγορα τυχόν κρίσεις εφοδιασμού, με κατεύθυνση των ροών ενέργειας σε όλη την Ε. Ένωση ανάλογα με τις ανάγκες. Η Επιτροπή έχει, στο πλαίσιο αυτό, επισημάνει 33 έργα υποδομών ζωτικής σημασίας.

- Διαφοροποίηση των χωρών και των διαύλων εφοδιασμού. Το 2013, το 39%, κατ΄όγκο, των εισαγωγών φυσικού αερίου στην Ε. Έ. προερχόταν από τη Ρωσία, το 33% από τη Νορβηγία και το 22% από τη Β. Αφρική (Αλγερία, Λιβύη). Η Ε. Έ. θα διατηρήσει τις σχεσεις της με αξιόπιστους εταίρους, παράλληλα, όμως, θα επιδιώξει συμφωνίες με νέες χώρες -εταίρους και διαύλους εφοδιασμού, πχ στην περιοχή της Κασπίας Θάλασσας, επεκτείνοντας περαιτέρω τον Νότιο Διάδρομο Μεταφοράς Φυσικού Αερίου με βασικό προωθούμενο έργο, προς το σκοπό αυτό, τον Διαδριατικό Αγωγό Φυσικού Αερίου:TransAdriatic Pipe Line (TAP)

(https://www.tap-ag.gr/), αναπτύσσοντας το Μεσογειακό Κομβο Φυσικού Αερίου (http://www.igi-poseidon.com/en/eastmed) και αυξάνοντας τις προμήθειες υγροποιημένου φυσικού αερίου.

- Ενίσχυση των μηχανισμών έκτακτης ανάγκης και αλληλεγγύης και προστασία των υποδομών ζωτικής σημασίας.

- Αύξηση της εγχώριας παραγωγής ενέργειας.

- Βελτίωση του συντονισμού των εθνικών πολιτικών και ενίσχυση του ενεργειακού διπλωματικού ρόλου της Ε. Έ, ώστε να μιλά με μια φωνή στα θέματα εξωτερικής ενεργειακής πολιτικής.

- Περαιτέρω ανάπτυξη των ενεργειακών τεχνολογιών και

- Αύξηση της Ενεργειακής Απόδοσης.

Κωνσταντίνος Φίλης: Η πιο ρεαλιστική εναλλακτική αυτή τη στιγμή είναι το Αζερμπαϊτζάν, το οποίο όμως ποσοτικά σε καμία περίπτωση δεν μπορεί να ανταγωνιστεί τη Ρωσία. Η Ρωσία παράγει περίπου 640 δισεκατομμύρια κυβικά μέτρα αερίου, όταν το Αζερμπαϊτζάν παράγει 20 με 25. Η δεύτερη πιο ρεαλιστική επιλογή αυτή τη στιγμή είναι αυτή της ανατολικής Μεσογείου, δηλαδή κυρίως το Ισραήλ και δευτερευόντως η Κύπρος και η Αίγυπτος, εδώ πάλι δεν μπορεί να ανταγωνιστεί αυτή η εναλλακτική ποσοτικά τη Ρωσία, αλλά είναι σημαντική ως συμπλήρωμα. Από κεί και πέρα η περίπτωση που μπορεί όντως να δημιουργήσει νέα δεδομένα στην ασφάλεια τροφοδοσίας, πάντα μιλώντας για φυσικό αέριο, απέναντι στη Ρωσία είναι το Ιράν, αλλά υπάρχουν τα προβλήματα με το Ιράν τα πολιτικά και φαίνεται ότι υπάρχει και μια διάθεση από την αμερικανική ηγεσία να περιθωριοποιήσει το Ιράν, πράγμα το οποίο θα επηρεάσει μάλλον και τις ενεργειακές σχέσεις μεταξύ Ιράν και ΕΕ. Οι χώρες που βρίσκονται από την άλλη πλευρά της Κασπίας, όπως είναι το Τουρκμενιστάν, σε καμία περίπτωση δεν μπορούν να ανταγωνιστούν τη Ρωσία, αλλά αυτό που σίγουρα δεν επιθυμούν είναι να διασυνδεθούν με την Ευρωπαϊκή πλευρά, τους ενδιαφέρει περισσότερο δηλαδή η αγορά της Κίνας, και από κει και πέρα έχουμε κράτη όπως το Ιρακινό Κουρδιστάν, το οποίο έχει ποσότητες αερίου μεν, ωστόσο αυτή τη στιγμή, λόγω της αστάθειας που επικρατεί στο Ιράκ, δύσκολα θα δούμε να μπαίνει στην εξίσωση και έχουμε και το αμερικανικό σχιστολιθικό αέριο, το οποίο έχει καλές προοπτικές, αλλά αυτή τη στιγμή είναι ακριβότερο από το ρώσικο, διότι θα

πρέπει να έρχεται από την Αμερική ως υγροποιημένο φυσικό αέριο (LNG) και έχει ένα υψηλότερο κόστος και το οποίο βέβαια δεν πρόκειται να διατεθεί στην Ευρώπη σε ποσότητες που θα μπορούσαν να αλλάξουν τα δεδομένα, γιατί φαίνεται ότι ο προσανατολισμός είναι περισσότερο προς την Κίνα και την αγορά την Ασιατική και λιγότερο προς την Ευρώπη.

Γιάννης Μανιάτης: Η πρώτη εναλλακτική που την έχουμε και υλοποιήσει είναι ο λεγόμενος Νότιος Διάδρομος, τροφοδοσία δηλαδή με φυσικό αέριο από το Αζερμπαϊτζάν μέσω του αγωγού ΤΑΡ. Ταυτόχρονα, η Ευρώπη, στο πλαίσιο πάντα της Ενεργειακής Ένωσης, έχει διακηρύξει ότι έχουμε χρέος ως κράτη-μέλη και το στηρίζει η Ένωση, να αναπτύξουμε τους ενδογενείς, τους εγχώριους πλουτοπαραγωγικούς πόρους και στο πλαίσιο αυτό, τόσο οι υδρογονάνθρακες, ως ορυκτά καύσιμα, όσο και οι ΑΠΕ, αποτελούν τους πιο νέους, σπουδαίους πυλώνες, πάνω στους οποίους μπορεί να στηριχθεί η μείωση της εξάρτησης από τη Ρωσία. Η Ρωσία, ήταν, είναι και θα συνεχίσει να είναι ένας στρατηγικός ενεργειακός εταίρος της Ευρώπης έτσι κι αλλιώς, αλλά όμως, είναι λογικό η Ευρώπη να ζητά να έχει λιγότερη εξάρτηση από τη Ρωσία, από τον έναν παραγωγό. Προς αυτή την κατεύθυνση και το Αζερμπαϊτζάν μπορεί να προσφέρει αλλά και η Νοτιοανατολική Μεσόγειος, που είναι πια μια νέα πηγή, μπορεί πραγματικά να βοηθήσει. Θετικό θεωρώ το γεγονός ότι τα κράτη-μέλη αλλά και η Ένωση γενικά στηρίζουν τη δημιουργία νέων υποδομών για μονάδες υγροποιημένου φυσικού αερίου σε πολλά κράτη-μέλη, που σημαίνει ότι θα έχουμε και άλλες πηγές τροφοδοσίας, γιατί μέχρι τώρα συνήθως είναι η Αλγερία, η Μεγάλη Βρετανία, η Νορβηγία που τροφοδοτούν, τώρα με πολύ περισσότερες μονάδες LNG, που πιθανότατα θα έρθει και από τις ΗΠΑ που είναι μια μεγάλη πηγή, μπορούμε να έχουμε νέες εναλλακτικές λύσεις.

5. Θα μπορούσε η Ανατολική Μεσόγειος να «μπει» στην ενεργειακή ατζέντα της ΕΕ; Ποια θεωρείτε ότι θα μπορούσε να είναι η θέση της Ελλάδας σε μία τέτοια προοπτική;

Στοιχεία απάντησης ερώτησης 5:Η

Χαράλαμπος Πίππος: Η Ανατολική Μεσόγειος είναι ήδη, προ πολλού, ενταγμένη επισήμως στην ενεργειακή agenda της Ε. Ένωσης, με κρίσιμο σημείο επικύρωσης εν λόγω γεγονότος την έγκριση του πρωτου καταλόγου έργων κοινού ενδιαφέροντος (PCIs) από την Ε. Επιτροπή το 2ο εξάμηνο του 2013, στα οποία συμπεριλήφθηκε και

ο αγωγός φυσικού αερίου East Med, στρατηγικής σημασίας για την Ε. Ένωση, ο οποίος προβλέπεται, να διέρχεται, όπως και ο TransAdriatic Pipeline (TAP), από την Ελλάδα, έχοντας ως πρόσθετο βασικό πλεονέκτημα, έναντι άλλων εναλλακτικών οδεύσεων, ότι αποφεύγεται η διέλευσή του από πολιτικά ασταθείς περιοχές και χώρες εκτός Ευρωπαϊκής Ένωσης της ΝΑ Μεσογείου, ως η Τουρκία .

Οι αγωγοί EAST MED και TAP αποτελούν δύο από τους σημαντικότερους άξονες ενεργειακής διαμετακόμισης στο πλαίσιο του λεγομένου Νοτίου Διαδρόμου Φυσικού Αερίου (Southern Gas Corridor) για την Ευρωπαϊκή Ένωση και η επιλογή τους ήταν το αποτέλεσμα μακράς και επίπονης κοινοτικής διαπραγμάτευσης σε ειδικές Κοινοτικές Ομάδες εργασίας αποτελούμενες από εθνικούς εμπειρογνώμονες των κρατών- μελών υπό την προεδρία της Ευρωπαϊκής Επιτροπής, στις οποίες επίσημος εξουσιοδοτημένος εθνικός εκπρόσωπος της χώρας ήταν ο αρμόδιος Δντης του Υπουργείου Περιβάλλοντος και Ενέργειας Χαράλαμπος Πίππος.

Σε πρόσφατο σχετικό διεθνές ενεργειακό συνέδριο "Athens Energy Forum", που πραγματοποιήθηκε στις 1-2 Φεβρουαρίου 2017, στο Ξενοδοχείο Χίλτον των Αθηνών, οι παρουσιάσεις και συζητήσεις περιέλαβαν και τον αγωγό EASTMED.

Ένα ειδικό σημείο που θα άξιζε μνείας για το εν λόγω σημαντικό κοινοτικό ενεργειακό έργο έργο, με βάση τα σημερινά δεδομένα, είναι πως ο χρόνος πιθανής έναρξης υλοποίησής του, έναντι άλλων, δυνητικά ανταγωνιστικών, λύσεων, θα εξαρτηθεί από πολλούς άλλους, πλην του γεωπολιτικού, παράγοντες, μεταξύ των οποίων:

- οι εξελίξεις στην διαθεσιμότητα από τις χώρες της περιοχής τεχνικοοικονομικά εκμεταλλεύσιμων κοιτασμάτων φυσικού αερίου προς διέλευση δι αγωγών προς τις αγορές της Δύσης, έναντι εσωτερικής κατανάλωσης μεγάλου μέρους αυτών, που αποτελεί, για παράδειγμα, σοβαρό ζήτημα υπό εξέταση από το Ισραήλ, ορισμένοι ενεργειακοί εμπειρογνώμονες του οποίου φαίνεται σήμερα να “φλερτάρουν” με την "οικονομικότερη", κατ' αυτούς, αλλά πολιτικά προφανώς ανασφαλέστερη λύση, της διέλευσης από την Τουρκία, αντί μόνον από κοινοτικές χώρες, συμπεριλαμβανομένης φυσικά της Ελλαδας, ως ο EASTMED,

- οι εν τω μεταξύ εκκρεμείς συμφωνίες περί Αποκλειστικής Οικονομικής Ζώνης (ΑΟΖ) μεταξύ χωρών της ευρύτερης περιοχής,

- οι τεχνολογικές εξελίξεις στην κατασκευή τέτοιων μεγάλων υποθαλάσσιων οδεύσεων και
- ο συνεχώς αναπτυσσόμενος ρόλος του υγροποιημένου φυσικού αερίου (LNG) και των τερματικών σταθμών (Terminals) τοπικής και περιφερειακής αξιοποίησής του.

(βλ.: https://ec.europa.eu/energy/sites/ener/files/documents/pci_7_3_1_en_2015.pdf ,

http://www.iene.eu/ienes-latest-analysis-examines-the-prospects-for-an-east-med-energy-corridor-p2951.html

http://mignatiou.com/2017/02/efiktos-ke-ikonomika-viosimos-o-agogos-fisikou-aeriou-east-med-meso-elladas/#.WKDYDAUeCHA.facebook).

Κωνσταντίνος Φίλης: Η θέση της Ελλάδας μπορεί να είναι διττή, είτε μέσω ενός υποθαλάσσιου αγωγού, ο οποίος έτσι κι αλλιώς συζητείται αυτή τη στιγμή, ο αγωγός EastMed, όπου θα μεταφέρει από τα κοιτάσματα Ισραήλ ή και Κύπρου, αέριο μέσω της ελληνικής επικράτειας προς την Ευρώπη. Αυτό είναι ένα σχέδιο το οποίο βρίσκεται μεν στα σκαριά, αλλά φαίνεται ότι δεν είναι στις προτεραιότητες του Ισραήλ, τουλάχιστον αυτή τη στιγμή που μιλάμε. Άρα λοιπόν, η Ελλάδα θα μπορούσε να παίξει το ρόλο του διαμετακομιστή σε αυτή την περίπτωση. Το δεύτερο σενάριο είναι μέσω του Floating LNG terminal (FLNG), το οποίο θα δημιουργηθεί στην Αλεξανδρούπολη, να μπορούμε να συγκεντρώνουμε ποσότητες LNG, που θα έρχονται είτε από το Ισραήλ, την Κύπρο ή και την Αίγυπτο στην Ελλάδα και από κει, μέσω ενός κάθετου άξονα, του διασυνδετήριου αγωγού Ελλάδας-Βουλγαρίας (IGB), να κατευθύνονται προς την Ευρώπη. Οι δυο λοιπόν εναλλακτικές για την συμμετοχή της Ελλάδας στη διαμετακόμιση είναι μέσω του EastMed, είτε μέσω του LNG, το οποίο θα φτάνει στην Αλεξανδρούπολη και από εκεί θα μπαίνει μέσα σε ένα δίκτυο αγωγών και θα κατευθύνεται με κάθετους άξονες προς την Ευρώπη.

Γιάννης Μανιάτης: Η Νοτιοανατολική Μεσόγειος φαίνεται ότι αποτελεί το νέο ενεργειακό Ελ Ντοράντο. Αν λάβει κανείς υπόψη του την ανακάλυψη των πρόσφατων κοιτασμάτων, Ταμάρ, Λεβιάθαν κτλ στο Ισραήλ, την Αφροδίτη στην Κύπρο, το Ζορ στην Αίγυπτο, τις πρωτοβουλίες του Λιβάνου και ασφαλώς τις καλές πληροφορίες που έχουμε εμείς για τα ελληνικά κοιτάσματα, τότε φαίνεται ότι πραγματικά δημιουργείται μια νέα πηγή ενεργειακής τροφοδοσίας ολόκληρης της

Ένωσης από την Νοτιοανατολική Μεσόγειο. Αυτό που έχει σημασία είναι να ενώσουμε δυνάμεις με περιφερειακές συνεργασίες τα κράτη-μέλη, έτσι ώστε να έχουμε συνέργειες οικονομίας κλίμακας αλλά και μεγαλύτερη προστιθέμενη αξία, γιατί πραγματικά η νοτιοανατολική Μεσόγειος αποτελεί νέα ενεργειακή πηγή τροφοδοσίας ολόκληρης της Ένωσης, που αναβαθμίζει και γεωπολιτικά αλλά και οικονομικά τα κράτη-μέλη. Η θέση της Ελλάδας μπορεί να είναι εξαιρετικά σημαντική σε αυτή την κατεύθυνση και αυτός είναι ακριβώς ο λόγος για τον οποίο ξεκινήσαμε και εμείς τις έρευνες υδρογονανθράκων.

6. Ποιοι είναι οι βασικοί λόγοι που εμπόδισαν/εμποδίζουν την έρευνα και εκμετάλλευση υδρογονανθράκων στην Ελλάδα; Γιατί ακόμα και σήμερα παρατηρείται έλλειψη κινητικότητας στον τομέα αυτό;

Στοιχεία απάντησης ερώτησης 6:

Χαράλαμπος Πίππος: Μετά μια μακρά περίοδο απουσίας συστηματικών ερευνών υδρογονανθράκων στην Ελλάδα, για διάφορους, πολιτικούς, κυρίως, λόγους, από το 1998 μέχρι το 2008, ακολούθως, αρχής γενομένης από το 2009 επί Υπουργίας καθηγητή κ. Γιάννη Μανιάτη στο τότε αρμόδιο Υπουργείο Περιβάλλοντος, Ενέργειας και Κλιματικής Αλλαγής, επανεκκίνησε δυναμικά η σχετική έρευνα, με (α) συστηματική επαναξιολόγηση των μέχρι τότε διαθέσιμων σεισμικών δεδομένων από τις προηγηθείσες γεωλογικές μελέτες, ερευνητικές γεωτρήσεις και γεωφυσικές διασκοπήσεις, (β) με σύνταξη και ψήφιση από τη Βουλή των Ελλήνων νέας σχετικής Νοοθεσίας για την Έρευνα και Εκμετάλλευση Υδρογονανθράκων στη Χώρα (ν. 4001/2011), (γ) με τη σύσταση νέου εθνικού Φορέα «Ελληνική Διαχειριστική Εταιρία Υδρογονανθράκων ΑΕ (ΕΔΕΥ ΑΕ)» {ν. 4001/2011 (Κεφάλαιο Β)} και (δ) με έναρξη προετοιμασίας και ακολούθως υλοποίησης, από τα τέλη του 2009 και μετά, νέων τεχνικά εξελιγμένων γεωφυσικών διασκοπήσεων σε πολλές περιοχές του Ελληνικού χώρου μέσω και σχετικών προκηρύξεων “ανοικτής θύρας” (open door invitations), με ευνοϊκά αποτελέσματα.

Κωνσταντίνος Φίλης: Υπάρχει προφανώς η κλασική ελληνική αβελτηρία, η γραφειοκρατία, οι διάφορες στρεβλώσεις και στο ίδιο το σύστημα, δηλαδή το δημόσιο, τον τρόπο με τον οποίο έγιναν ή δεν έγιναν διαγωνισμοί, οι γνωστές καθυστερήσεις κτλ. Βέβαια μεταξύ 2012 και 2014 προς 2015 υπήρξε, επί Υπουργίας

του Μανιάτη και λίγο νωρίτερα, μια εμπεριστατωμένη και επαγγελματική δουλειά η οποία έγινε και με τους διαγωνισμούς, όμως φαίνεται ότι κάπου διακόπηκε η δυναμική αυτή. Θεωρώ ότι με κάποιο τρόπο τώρα και λόγω των συνθηκών μπορεί να επανακάμψει, αλλά στην πραγματικότητα πρέπει κανείς να δει ποιές είναι οι δυνατότητες της Ελλάδας και κυρίως γιατί μέχρι πρότεινως υπήρχε μειωμένο ενδιαφέρον. Αυτό μπορεί να είχε να κάνει και με το κατά πόσο είμασταν ανταγωνιστικοί, σίγουρα είχε να κάνει και με το κόστος του πετρελαίου, του οποίου και σήμερα η τιμή παραμένει χαμηλή, πράγμα το οποίο σημαίνει ότι το ενδιαφέρον δεν θα είναι τόσο αυξημένο όσο θα θέλαμε, έχει να κάνει επίσης με το ότι αρκετά από τα κοιτάσματα τα δικά μας τα σημαντικά, ιδίως αυτά που βρίσκονται νοτίως της Κρήτης, είναι σε μεγάλα βάθη, έχει να κάνει με το ότι δεν προσελκύσαμε επενδύσεις σε αυτόν τον τομέα, γιατί η Ελλάδα δεν έχει την τεχνογνωσία, ούτε τα οικονομικά μεγέθη για να μπορέσει να το κάνει αυτό από μόνη της, άρα έπρεπε να προσεκλύσει τεχνογνωσία και εμπειρία. Αυτό για να το κάνει απαιτούνται χρήματα αλλά απαιτεί και να απευθυνθείς στους κατάλληλους φορείς και αυτό δεν έγινε στο βαθμό που θα έπρεπε να έχει γίνει, με εξαίρεση αυτή την τριετία και επίσης βέβαια, θα έπρεπε να έχουμε και ένα πιο σταθερό περιβάλλον, επιχειρηματικό και φορολογικό, για να μπορέσουμε να προσελκύσουμε το ενδιαφέρον και εταιριών, διότι αν έχεις κάποιο μειονέκτημα και από την στιγμή που δεν είσαι ενεργειακό Ελ Ντοράντο, πρέπει να δώσεις κάποια άλλα κίνητρα στους επιχειρηματίες, τα οποία εμείς κατά το παρελθόν δεν τα είχαμε δώσει**.**

Γιάννης Μανιάτης: Υπάρχουν διάφοροι λόγοι που έχουν οδηγήσει σε αυτό. Εγώ ομολογώ ότι έχω ρωτήσει πάρα πολλές φορές για ποιο λόγο δεν προχώρησαν τα προηγούμενα χρόνια. Υπάρχουν διάφοροι επιμέρους λόγοι, δεν μπορώ να τοποθετηθώ για κάτι στο οποίο δεν συμμετείχα, θεωρώ όμως ότι υπάρχουν δυο παράμετροι οι οποίες έτσι κι αλλιώς επηρεάζουν. Η μια είναι το ότι τα προηγούμενα χρόνια η τιμή του πετρελαίου ήταν πολύ χαμηλή και επειδή οι ελληνικές θάλασσες είναι δύσκολες, είναι βαθιές θάλασσες με δύσκολη γεωλογική δομή δεν συνέφερε, συνέφερε δηλαδή περισσότερο να κάνει κανείς εισαγωγή από πιο εύκολες χώρες, από χώρες που είχαν φθηνότερο φυσικό αέριο, άρα λοιπόν και η δυσκολία η γεωλογική αλλά και η χαμηλή τιμή νομίζω ότι ήταν κάποιοι από τους παράγοντες, όχι αποκλειστικοί, πάντως ήταν και αυτοί κάποιοι παράγοντες. Τώρα, το γιατί είχαν σταματήσει είναι κάτι το οποίο μπορούν να το απαντήσουν άλλοι και όχι εγώ.

7. Πέραν των περιοχών του Ιονίου, του Πατραϊκού Κόλπου και της θαλάσσιας περιοχής νοτιοδυτικώς της Κρήτης, υπάρχουν στοιχεία που να υποδεικνύουν την ύπαρξη κοιτασμάτων στο Αιγαίο; Ποιοι είναι οι λόγοι που κρατούν τις επίσημες έρευνες (και την προοπτική της εκμετάλλευσης) μακριά από αυτή την περιοχή; Ποιοι είναι οι τρόποι με τους οποίους θα μπορούσε η Ελλάδα να καταστήσει εφικτή την εκμετάλλευση ενδεχόμενων κοιτασμάτων στο Αιγαίο;

Στοιχεία απάντησης ερώτησης 7:

Χαράλαμπος Πίππος: Τα υπό εκμετάλλευση κοιτάσματα πετρελαίου στο Βόρειο Αιγαίο (Πρίνος και Νότια Καβάλα), από τις αρχές της δεκαετίας του 1980 μέχρι σήμερα, αποτελούν αδιάψευστο τεκμήριο ύπαρξης αξιοποιήσιμων κοιτασμάτων πετρελαίου και στο Αιγαίο, πέραν των λοιπών υπο διερεύνηση περιοχών που αναφέρονται ορθά στην ερώτηση.

Από την άλλη πλευρά, η μόνη περιοχή υψηλού γεωλογικού και γεωφυσικού ενδιαφέροντος για πιθανή ύπαρξη μεγάλων αξιοποίησιμων κοιτασμάτων φυσικού αερίου ΝΑ της Κρήτης δεν έχει ακόμη ερευνηθεί συστηματικά λόγω της ανάγκης να προηγηθούν απαιτούμενες σχετικές πολιτικές και νομικές συμφωνίες για τον ακριβή καθορισμό των ΑΟΖ απο τις χώρες της περιοχής, οι οποίες έχουν ήδη δρομολογηθεί από το Υπουργείο Εξωτερικών μεταξύ Κύπρου, Ελλαδος, Ισραήλ και Αιγύπτου, μέσω σχετικών διακρατικών συμφωνιών, ενώ θα ακολουθήσουν αργότερα οι σχετικές συζητήσεις με τη Λιβύη. Ακολούθως θα λάβουν χώρα οι σχετικές διαγωνιστικές διαδικασίες για ανάθεση τεμαχίων προς έρευνα και εκμετάλλευση.

Σε συνέχεια όσων αναφέρθηκαν στο προηγούμενο ερώτημα, παρά τα όποια διαλείμματα και καθυστερήσεις, η πορεία έρευνας και εκμετάλλευσης υδρογονανθράκων στην Ελλάδα και η εξαιρετικά επιτυχής παραγωγή πετρελαίου επί δεκαετίες στο Β. Αιγαίο (από το 1980 και μέχρι σήμερα), χωρίς καμιά απολύτως περιβαλλοντική ή άλλη επιβάρυνση (βλ. σύντομο επίσημο σχετικό ιστορικό ερευνών υδρογονανθράκων από το αρμόδιο Υπουργείο Περιβάλλοντος και Ενέργειας: http://www.ypeka.gr/Default.aspx?tabid=765) προιωνίζει ένα ιδιαίτερα ευνοϊκό μέλλον.

Κωνσταντίνος Φίλης: Δεν υπάρχουν ενδείξεις ότι στο Αιγαίο έχουμε κάτι πέραν του Μπάμπουρα και της Καβάλας, ότι υπάρχει κάτι το οποίο να είναι τόσο σημαντικό

ώστε να αξίζει τον κόπο να μπούμε στη διαδικασία να το εξετάσουμε. Ασφαλώς, οι σχέσεις με την Τουρκία και οι αμφισβητήσεις από πλευράς Τουρκίας επηρεάζουν και την ελληνική κυβέρνηση και τις εταιρίες αλλά στην πραγματικότητα δεν έχουμε μέχρι τώρα ενδείξεις τέτοιες και τόσο ισχυρές για την περίπτωση του Αιγαίου ώστε να αξίζει τον κόπο να μπούμε σε μια διαδικασία που θα μας φέρει και σε αντιπαράθεση με την Τουρκία αλλά κυρίως να μπούμε σε μια διαδικασία χρονοβόρα της οποίας το αποτέλεσμα δεν θα είναι και γνωστό/βέβαιο. Σεισμικές έρευνες δεν έχουν γίνει για τον προφανή λόγο, δηλαδή το ότι υπάρχει το ζήτημα της Τουρκίας και αν προχωρήσεις σε κάτι τέτοιο πάντα έχεις στο μυαλό σου τον κίνδυνο, ο οποίος προκύπτει από το γεγονός ότι δεν έχεις κάνει την επέκταση των χωρικών σου υδάτων στα 12 ν.μ. και έχεις την Τουρκία η οποία αμφισβητεί το status quo του Αιγαίου αυτή την στιγμή.

Γιάννης Μανιάτης: Επειδή αυτή η ερώτηση άπταιται βασικών θεμάτων εξωτερικής πολιτικής η απάντησή μου θα είναι ενσυνείδητα πολύ καθαρή και σαφής. Η Ελλάδα έχει αποδεδειγμένα ενδείξεις ισχυρές ότι έχουμε κοιτάσματα στο Ιόνιο και στα νότια της Κρήτης και γι'αυτό ξεκινήσαμε από κει. Οι ενδείξεις είναι σημαντικά λιγότερες για το Αιγαίο, όμως γιατί δεν έχουν γίνει σε μεγάλο βαθμό τα σεισμικά που θα μπορούσαν να μας το αποδείξουν, γιατί δεν έχει νόημα να λέει κανείς οτιδήποτε εάν δεν προηγηθούν έρευνες σεισμικού χαρακτήρα. Όμως, η Ελλάδα έτσι κι αλλιώς θα διερευνήσει κάθε σπιθαμή εδάφους και θαλάσσιας έκτασης όπου ασκεί κυριαρχία ή κυριαρχικά δικαιώματα. Εμείς είχαμε στο μυαλό μας ένα επιχειρησιακό σχέδιο, ένα χρονοδιάγραμμα και ξεκινούσαμε από το Ιόνιο και είχαμε στη συνέχεια στο μυαλό μας και το Αιγαίο και άλλες περιοχές. Κατά συνέπεια, θέλω να ελπίζω μάλλον, ότι αυτό θα συνεχιστεί με έναν προγραμματισμό που πάντα θα είναι υπό τον κεντρικό συντονισμό της κυβέρνησης, του πρωθυπουργού, του υπουργού εξωτερικών, του υπουργού ενέργειας, έτσι ώστε τα πράγματα να εξελιχθούν θετικά.

8. Θα μπορούσε η εκμετάλλευση των ελληνικών υδρογονανθράκων να αλλάξει την οικονομική κατάσταση της χώρας μας καθώς και τη γεωπολιτική σχέση της ίδιας με την Ε.Έ. αλλά και με τρίτες χώρες;

Στοιχεία απάντησης ερώτησης 8:

Χαράλαμπος Πίππος: Πράγματι, η προωθούμενη δυναμικά από τις ελληνικές κυβερνήσεις, ιδίως μετα το 2009, έρευνα και εκμετάλλευση ελληνικών

υδρογονανθράκων με βάση τη διαθέσιμη σήμερα υψηλή τεχνογνωσία, μπορεί να συνεισφέρει ουσιαστικά στη βελτίωση της οικονομικής κατάστασης της χώρας, ιδίως στη σημερινή περίοδο της κρίσης, διευκολύνοντας, μαζί με σειρά άλλων διαρθρωτικών και επενδυτικών αποφάσεων, στην ταχεία ανάταξη της ελληνικής οικονομίας και σε επάνοδο της χώρας σε βιώσιμη ανάπτυξη. Ταυτόχρονα, είναι βέβαιο πως οι δυναμικά αναπτυσσόμενες ενεργειακές συνεργασίες της Ελλάδας με γειτονικές τρίτες χώρες, σε συνδυασμό με την ταχεία προώθηση κυριώς μεγάλων αγωγών φυσικού αερίου, όπως ο ΤΑΡ και η διασύνδεση φυσικού αερίου Ελλάδας – Βουλγαρίας (iGB), θα ενισχύσουν τη γεωπολιτική θέση της χώρας, αναβαθμίζοντάς την σταδιακά σε σημαντικό κόμβο ενεργειακής διαμετακόμισης (hub) στην ευρύτερη περιοχή της ΝΑ Μεσογείου.

Επί πλέον, η ενεργειακή διπλωματία της χώρας, ασκούμενη από το Υπουργείο Εξωτερικών της Ελλάδας και στηριζόμενη στην εθνική και κοινοτική νομοθεσία καθώς και στις σχετικές διεθνείς συνθήκες, αποτελεί εχέγγυο για μια σταθερή και επιτυχημένη πορεία (βλ. σχετική επίσημη επισκόπιση: http://www.mfa.gr/energeiake-diplomatia/).

Κωνσταντίνος Φίλης: Αναμφίβολα, μια χώρα η οποία μπαίνει στον ενεργειακό χάρτη ως παραγωγός στο βαθμό που έχεις ποσότητες που σε καταστούν παραγωγό, όχι για να καλύψεις την εγχώρια κατανάλωση, αλλά για να διαθέτεις το προϊόν, ναι, αυτό θα αλλάξει τα δεδομένα, θα μπορούσε να αλλάξει τους συσχετισμούς. Η Ελλάδα από μια χώρα η οποία μέχρι πριν από λίγα χρόνια ήταν απούσα από τον ενεργειακό χάρτη, μπορεί ξαφνικά να εισέλθει σε αυτόν, όχι μόνο ως διαμετακομίστρια, αλλά και ως χώρα που παράγει προϊόν. Αυτό σε αναβαθμίζει γεωπολιτικά, σου δίνει λόγο και ρόλο επί των εξελίξεων των ενεργειακών και μπορείς να διασυνδεθείς με την Ευρώπη και να δώσεις μια λύση ακόμη, που δεν θα είναι μάλλον καθοριστική απέναντι στο ζήτημα της Ευρωπαϊκής ενεργειακής ασφάλειας τροφοδοσίας, αλλά όλα αυτά υπό την προϋπόθεση ότι οι ποσότητες θα είναι τέτοιες ώστε θα αξίζει τον κόπο να ασχοληθεί κάποιος μαζί σου. Ως προς το οικονομικό, εννοείται ότι οι τοπικές οικονομίες θα ενισχυθούν, θα υπάρξουν θέσεις εργασίας αρκετές στο στάδιο της κατασκευής, νομίζω αρκετά λιγότερες στο στάδιο της υλοποίησης.

Γιάννης Μανιάτης: Αναμφισβήτητα ναι. Ένα δυνατό ναι. Εγώ το πιστεύω βαθιά, έχω ισχυρές ενδείξεις και αποδείξεις ότι είναι έτσι. Για να το καραφέρουμε όμως αυτό χρειάζεται συνέπεια, συνέχεια, επενδυτικό κλίμα που να προσελκύει επενδυτές, να διασφαλίσει απολύτως την προστασία του περιβάλλοντος, έτσι ώστε να υπάρχουν και οι αντίστοιχες τοπικές συμμαχίες. Φτάνει να αναφέρω μόνο ότι σε μια πρόσφατη ανακοίνωση των ΕΛΠΕ, αναφέρεται ότι από το οικόπεδο του Πατραϊκού Κολπου η Ελλάδα θα έχει δημόσια έσοδα της τάξης των 150 εκατομμυρίων δολαρίων το χρόνο, κάθε χρόνο για τα επόμενα 25 με 30 χρόνια που διαρκεί η εκμετάλλευση του κοιτάσματος. Αν θεωρήσουμε ότι έχουμε με μια ρεαλιστική εκτίμηση, τουλάχιστον 10 Πατραϊκούς, βγάζει εύκολα κανείς το συμπέρασμα ότι ένα ποσό της τάξης του 1,5 με 2 δισεκατομμυρίων ευρώ μπορεί να είναι εφικτό τα επόμενα 10 χρόνια να εισρέει στη εθνική οικονομία από την εκμετάλλευση και την αξιοποίηση των υδρογονανθράκων και επειδή πολλές φορές οι υδρογονάνθρακες κρύβουν και ευχάριστες εκπλήξεις νομίζω ότι στην πορεία των ερευνών θα ανακαλύψουμε και άλλα κοιτάσματα τα οποία θα μπορούν να μας κάνουν ακόμα πιο αισιόδοξους.

9. Μπορεί η Ελλάδα να προσφέρει μια πιο ασφαλή εναλλακτική και ένα στρατηγικό ατού στην Ε.Έ (σε σύγκριση πάντοτε με τους τωρινούς της προμηθευτές);

Στοιχεία απάντησης ερώτησης 9:

Χαράλαμπος Πίππος: Με βάση τα στοιχεία που εκτέθηκαν ως απαντήσεις στις προηγούμενες ερωτήσεις, η απάντηση στο συγκεκριμένο ερώτημα είναι αδιαμφισβήτητα θετική. Η διαφοροποίηση οδών και πηγών ενεργειακής διαμετακόμισης, μέσω των υφιστάμενων και των σχεδιαζόμενων αγωγών διαμετακόμισης φυσικού αερίου που διέρχονται από την Ελληνική Επικράτεια, όπως:

- το ελληνικό σύστημα φυσικού αερίου που εισάγεται από Ρωσία,
- η υπάρχουσα ενεργός διασύνδεση φυσικού αερίου με την Τουρκία στην περιοχή του Έβρου,
- οι υπό κατασκευή σημαντικοί αγωγοί φυσικού αερίου TAP και IGB,
- ο υπό αναβάθμιση σημαντικός τερματικός σταθμός υγροποιημένου φυσικού αερίου στη νήσο Ρεβυθούσα,

- η προωθούμενη κατασκευή σύγχρονου πλωτού σταθμού αποθήκευσης και επαναεριοποίησης φυσικού αερίου (Floating Storage and Regasification Unit: FSRU) στην περιοχή της Αλεξανδρούπολης και

- η σχεδιαζόμενη προώθηση του μεγάλου αγωγού Κοινού Ενδιαφέροντος EASTMED σε μεσοπρόθεσμη βάση,

διαμορφώνουν τις προϋποθέσεις, ώστε η Ελλαδα, ως μόνη χώρα με αξιοσημείωτη πολιτική σταθερότητα και προοπτικές δυναμικής ανάπτυξης στην ευρύτερη περιοχή, να εξελιχθεί σε μια ασφαλή προμηθεύτρια χώρα και σε ένα στρατηγικό ενεργειακό εταίρο, όχι μόνο της Ε. Ένωσης, αλλά και των γειτονικών χωρών της ευρύτερης περιοχής της ΝΑ Μεσογείου, συνεισφέροντας, έτσι, στην ενίσχυση της ευημερίας και της πολιτικής σταθερότητας στην εν λόγω ευαίσθητη περιοχή του κόσμου.

Κωνσταντίνος Φίλης: Εννοείται ότι μπορεί να προσφέρει ένα στρατηγικό ατού, καθώς είναι κράτος-μέλος της ΕΕ, είναι μια χώρα που είναι στο στενό πυρήνα της Ευρώπης, έχει το πλεονέκτημα ότι είναι προβλέψιμος εταίρος, όλο αυτό είναι πολύ σημαντικό και για τους Ευρωπαίους. Μακάρι δηλαδή οι Ευρωπαίοι να είχαν αυτό που λέμε τους εγχώριους πόρους (indigenous resources) και να είχαν τη δυνατότητα διάφορες ευρωπαϊκές χώρες να μπορούσαν να παράγουν και αθροίζοντας αυτή την παραγωγή να περιόριζαν την εξάρτισή τους από τρίτους εταίρους.

Γιάννης Μανιάτης: Απολύτως ναι. Ελλάδα και Κύπρος όπως έχουμε ενώσει τις δυνάμεις μας στα εθνικά θέματα, πρέπει να ενώσουμε τις δυνάμεις μας και στα ενεργειακά, εγώ αυτό το ονομάζω κοινό ενεργειακό δόγμα Ελλάδας-Κύπρου. Πρέπει οι δυο χώρες, τα δύο κράτη-μέλη να βαδίσουμε απόλυτα συντονισμένα και αδελφικά, γιατί μόνο έτσι μπορούμε να μεγιστοποιήσουμε τις εθνικές μας ωφέλειες και ναι η απάντηση είναι εξαιρετικά θετική, η Ελλάδα μπορεί να αποτελέσει, μαζί με τη Κύπρο ένα νέο στρατηγικό τροφοδότη της Ευρώπης.

10. Ποια η προτεραιότητα της Ελλάδας αυτή την στιγμή σε σχέση με το ενεργειακό της προφίλ - να γίνει και η ίδια παραγωγός ενέργειας (υδρογονανθράκων, ΑΠΕ), ή να εξελιχθεί σε διαμετακομιστικό κόμβο ενέργειας;

Στοιχεία απάντησης ερώτησης 10:

Χαράλαμπος Πίππος: Καθίσταται σαφές από τις προηγούμενες απαντήσεις και τα επίσημα εθνικά στοιχεία που παρατέθηκαν ότι η ενεργειακή πολιτική της Ελλαδας

παραμένει πολυσχιδής και ισορροπημένη, στηριζόμενη στις σχετικές εθνικές και κοινοτικές προτεραιότητες και συνεκτιμώντας τις διεθνείς εξελίξεις στον τομέα, σε συνδυασμό με σταδιακή ανάπτυξη όλων των διαθέσιμων πηγών ενέργειας που διαθέτει, με τήρηση των περιβαλλοντικών δεσμεύσεων και παράλληλα με δυναμική προώθηση των αγωγών ενεργειακής διαμετακόμισης εθνικής και κοινοτικής σημασίας που θα την καταστήσουν σημαντικό κόμβο ενεργειακής διαμετακόμισης στην ευρύτερη περιοχή της ΝΑ Μεσογείου.

Πιο συγκεκριμένα, το σχέδιο της σημερινής ελληνικής κυβέρνησης για την μετάβαση σε ένα νέο ενεργειακό μείγμα, το οποίο παρουσίασε ο νυν Υπουργός Περιβάλλοντος και Ενέργειας, Γιώργος Σταθάκης, σε ομιλία που έδωσε τη Δευτέρα 20.3.2017, στο Βερολίνο, στο πλαίσιο του συνεδρίου Berlin Energy Transition Dialogue 2017, το οποίο διοργάνωσε η γερμανική κυβέρνηση, περιλαμβάνει την ενίσχυση της συμμετοχής των Ανανεώσιμων Πηγών Ενέργειας (ΑΠΕ) με παράλληλη διασφάλιση της ενεργειακής ασφάλειας και την ενίσχυση του ανταγωνισμού προς όφελος του τελικού καταναλωτή.

Το εν λόγω σχέδιο, σε συνέχεια και συνέπεια προς τους βασικούς διαχρονικούς άξονες ενεργειακής πολιτικής της χώρας , περιλαμβάνει 6 κεντρικούς πυλώνες, που αφορούν:

- την ολοκλήρωση ενός σταθερού και διαφανούς θεσμικού πλαισίου, εντός του οποίου θα επιτευχθεί η περαιτέρω διείσδυση των ΑΠΕ
- την ανάδειξη της Ελλάδας ως χώρας «κλειδί» για τη μεταφορά φυσικού αερίου στην περιοχή της Νοτιοανατολικής Ευρώπης
- την εισαγωγή τεχνολογιών φιλικών για το περιβάλλον στη λιγνιτική παραγωγή
- τη βελτίωση της ενεργειακής αποδοτικότητας, ειδικά στον κτιριακό τομέα
- τη δημιουργία ευκαιριών για την συμμετοχή πολιτών και συλλογικοτήτων στην αγορά ενέργειας, μέσω του νομοσχεδίου που επεξεργάζεται το Υπουργείο για τους ενεργειακούς συνεταιρισμούς και
- την αξιοποίηση του δυναμικού των μη διασυνδεδεμένων νησιών, για την εισαγωγή της καινοτομίας στον τομέα των ΑΠΕ.

Ειδικά για τον τελευταίο πυλώνα, η σημερινή κυβέρνηση, ως έχει δηλώσει, βρίσκεται σε συνεννόηση με την Ευρωπαϊκή Επιτροπή για την κατάρτιση ενός φιλόδοξου σχεδίου που αφορά στα νησιά, ώστε να υιοθετηθεί ένα νέο ενεργειακό μοντέλο, με την ολοκλήρωση των διασυνδετήριων αγωγών και την εγκατάσταση αυτόνομων συστημάτων φιλικών προς το περιβάλλον. Η εν λόγω πρωτοβουλία «Ενεργειακά νησιά» προβλέπεται να δρομολογηθεί επί προεδρίας της Μάλτας, με το πρώτο φόρουμ να πραγματοποιείται στην Κρήτη, τον Ιούνιο 2017.

Κωνσταντίνος Φίλης: Νομίζω προτεραιότητα της Ελλάδας είναι ασφαλώς να γίνει μια σημαντική χώρα για τη διαμετακόμιση του προϊόντος και από κει και πέρα είναι να δεί αν μπορεί να καταστεί κόμβος εμπορίας φυσικού αερίου, στο μέλλον και σε τρίτο επίπεδο και χρονικά, θα έβλεπα τη δυνατότητα να μπορεί να παράγει και η ίδια προϊόν και να είναι ένας εκ των παραγωγών της ευρύτερης περιοχής και κυρίως της Ευρώπης.

Γιάννης Μανιάτης: Και τα δυο και στον ίδιο βαθμό. Το ένα δεν είναι αντικρουόμενο με το άλλο. Εμείς είχαμε ξεκινήσει ταυτόχρονα και τα δύο και μπορούν να προχωρήσουν. Αντίθετα, πιστεύω ότι ταυτόχρονη προώθηση και των δυο βοηθάει και τα δύο. Δεν θα πρέπει να εγκαταλείψουμε ή να δώσουμε προτεραιότητα σε κάποιο από τα δύο, πρέπει να προχωρήσουμε παράλληλα και στην αξιοποίηση των εθνικών μας κοιτασμάτων αλλά και στη διαμόρφωση της Ελλάδας ως μια χώρα που είναι κόμβος ενεργειακός της Ευρώπης. Ήδη ο ΤΑΡ γίνεται πραγματικότητα, ο ελληνοβουλγαρικός IGB είναι σε πολύ καλό στάδιο ωριμότητας, ο EastMed, που συνδέει τα κοιτάσματα Κύπρου και Ισραήλ μέσω Κρήτης και Πελοποννήσσου με την Ιταλία έχουμε αποδείξει ότι τεχνικοοικονομικά και εμπορικά είναι εφικτός και υλοποιήσιμος. Κατά συνέπεια η Ελλάδα έτσι κι αλλιώς σχηματίζεται σε ένα νέο ενεργειακό κόμβο της Ευρώπης μέσα και από τους αγωγούς. Στο άλλο κομμάτι, δηλαδή της εκμετάλλευσης των υδρογονανθράκων, φαίνεται να είναι λιγότερο ενεργό, διότι δεν το προωθεί η κυβέρνηση. Δηλαδή, όταν ήμουν εγώ στο Υπουργείο, είχα προκηρύξει και είχα κυρώσει τις πρώτες τρείς συμβάσεις. Είχα προκηρύξει το μεγάλο διαγωνισμό για τα 20 οικόπεδα που έχουμε ήδη τρείς προσφορές για τρία οικόπεδα και είχα προκηρύξει και το διαγωνισμό για τα τρία χερσαία, άρα συνολικά μέσα σε 3,5 χρόνια η Ελλάδα μπορούσε σήμερα που μιλάμε να είχε εννιά οικόπεδα στον αέρα, με αναδόχους μέσα και αυτό θα ήταν κάτι πολύ σπουδαίο, αλλά δυστυχώς δεν προχώρησε. Άρα είναι και θέμα πολιτικής βούλησης και πολιτικών προτεραιοτήτων

και όλα μου δείχνουν οτι η σημερινή κυβέρνηση δεν εχει την ίδια προτεραιοποίηση, τουλάχιστον με αυτήν που είχαμε εμείς και εύχομαι να την αποκτήσει.

11. Σε τι βάθος χρόνου θα μπορούσε η Ελλάδα να μετεξελιχθεί σε διαμετακομιστικό κόμβο ενέργειας και υπό ποιες προϋποθέσεις; Με ποιον τρόπο θεωρείτε ότι η εσωτερική κατάσταση και η εξωτερική πολιτική της Τουρκίας επηρεάζει αυτή την προοπτική της Ελλάδας;

Στοιχεία απάντησης ερώτησης 11:

Χαράλαμπος Πίππος: Με βάση τα υφιστάμενα χρονοδιαγράμματα υλοποίησης των ήδη προωθούμενων μεγάλων έργων ενεργειακής διαμετακόμισης φυσικού αερίου που προεκτέθηκαν, και συγκεκριμένα:

- του μεγάλου αγωγού TAP (βλ.: https://www.tap-ag.gr/%CE%9F-%CE%91%CE%B3%CF%89%CE%B3%CF%8C%CF%82) που προβλέπεται να ολοκληρωθεί και τεθεί σε λειτουργία το 2020, και

- του σημαντικού διασυνδετήριου αγωγού Ελλάδας – Βουλγαρίας (IGB), (βλ.:http://www.depa.gr/index3.php/content/article/002005005/179.html), η πρώτη φάση του οποίου αφορά στην κατασκευή αγωγού μήκους 182 χλμ και διαμέτρου 32 ιντσών με έναρξη εμπορικής λειτουργίας στα τέλη του 2019 - αρχές 2020 και η δεύτερη φάση αφορά στην προσθήκη σταθμού συμπίεσης στη Βουλγαρία, του οποίου η εμπορική λειτουργία θα ξεκινήσει τέσσερα χρόνια μετά τη λήξη της πρώτης φάσης, ενώ η υλοποίησή του θα εξαρτηθεί από την ανταπόκριση της αγοράς,

σε συνδυασμό, μεταξύ άλλων, με:

- την αναβάθμιση του τερματικού σταθμού υγροποιημένου φυσικού αερίου στη Ρεβυθούσα (βλ.: http://www.desfa.gr/?p=10963) και τους διατηρούμενους σχεδιασμούς για την προώθηση και του έργου EAST MED σε μεσοπρόθεσμη βάση δεκαετίας, και την

- προωθούμενη υλοποίηση του πλωτού σταθμού FSRU στην Αλεξανδρούπολη από την εταρεία GAZTRADE του Ομίλου Κοπελούζου (βλ.: http://www.gastrade.gr/en/the-company/the-project.aspx),

αναμένεται ότι θα πληρωθούν οι βασικές προϋποθέσεις μετατροπής της Ελλάδας σε σημαντικό κόμβο ενεργειακής διαμετακόμισης εντός της προσεχούς δεκαετίας 2020-

2030, σε μια κρίσιμη περίοδο – ορόσιμο για τις ενεργειακές εξελίξεις στην ευρύτερη περιοχή της ΝΑ Μεσογείου, εφόσον τηρηθούν τα προβλεπόμενα χρονοδιαγράμματα υλοποίησης και έναρξης λειτουργίας των σχετικών έργων.

Κωνσταντίνος Φίλης: Η Ελλάδα θα μπορούσε να μετεξελιχθεί σε χώρα σημαντική για τη διαμετακόμιση σε ένα βάθος δεκαετίας περίπου από σήμερα, αν βάλουμε δηλαδή κάτω τα έργα τα οποία είτε μπορούν να έρθουν από την Ανατολική Μεσόγειο, είτε μπορεί να έρθουν μελλοντικά από το Ιράν, είτε μπορεί να έρθουν από άλλες πηγές, ακόμα και από την Αμερική, αν μιλάμε για το LNG, αυτό δεν μπορεί να συμβεί πριν από το 2025, θα το έβλεπα δηλαδή χοντρικά σε ένα βάθος δεκαετίας. Η Ελλάδα πρέπει να εξακολουθήσει να είναι σταθερή, πρέπει να επιθυμεί να είναι σταθερή και η περιοχή γύρω από αυτήν, δεν κερδίζουμε τίποτα για παράδειγμα από την κρίση στα Βαλκάνια, όταν μιλάμε για κάθετους άξονες η κρίση στα Βαλκάνια επηρεάζει και τη δική μας θέση, πρέπει φορολογικά να δώσει κίνητρα προς τις εταιρίες, χωρίς αυτό να σημαίνει ότι θα κάνει συμφωνίες λεόντιες, αλλα οφείλει να δώσει κίνητρα προς τις εταιρίες, πρέπει να είναι εξωστρεφής, που σημαίνει να αυτοδιαφημίζεται στο εξωτερικό και να αυτοσυστήνεται ως μια χώρα που μπορεί να αποτελέσει κόμβο και να αναδείξει τα συγκρητικά της πλεονεκτήματα, κυρίως το ότι είναι χώρα της ΕΕ και της ευρωζώνης και τη στρατηγική γεωγραφική της θέση. Επίσης, σε σχέση με την Τουρκία δεν νομίζω ότι επηρεάζεται. Η Ελλάδα επηρεάζεται στο βαθμό ότι τα έργα που περνάνε από την Τουρκία μπορεί να επηρεαστούν εφ'όσον η κατάσταση στη Τουρκία εκτραχυνθεί κα ξεφύγει από κάθε έλεγχο, αλλά αν μιλάμε για την Ελλάδα αποκλειστικά, μπορεί να επηρεαστεί από το γεγονός επι παραδείγματι, ότι η Τουρκία θέλει αυτή να έχει πρόσβαση στην Ανατολική Μεσόγειο, αλλά ο ανταγωνισμός είναι κομμάτι των ενεργειακών σχέσεων, όπως είναι και η συνεργασία, άρα σε κάποια έργα μπορεί να έχουμε συνεργασία με την Τουρκία, όπως είναι ο ΤΑΡ και να θέλουμε η Τουρκία να είναι σταθερή, σε κάποια άλλα έργα θα είμαστε ανταγωνιστές με την Τουρκία, αυτό όμως είναι μέσα στο παιχνίδι, δεν είναι κάτι το οποίο μπορείς να αποφύγεις.

Γιάννης Μανιάτης: Η Τουρκία έτσι κι αλλιώς είναι πάντα ένας θορυβώδης γείτονας. Τώρα τελευταία μάλιστα είναι πολύ πιο θορυβώδης από ότι στο παρελθόν, πρέπει όμως να καταλάβει οτι το διεθνές δίκαιο είναι η μοναδική βάση πάνω στην οποία μπορούμε να συζητούμε. Το διεθνές δίκαιο η Ελλάδα το σέβεται, τις διεθνείς συνθήκες και κυρίως αυτή της Λωζάνης επίσης, κατά συνέπεια οφείλει η Τουρκία να

προσαρμοστεί σε αυτούς τους κανόνες, στους οποίους έχουν προσαρμοστεί όλα τα πολιτισμένα κράτη. Τώρα σε τι βάθος χρόνου, εγώ θα έδινα μια τάξη μεγέθους 5ετίας-7ετίας έτσι ώστε η Ελλάδα υπό φυσιολογικές συνθήκες να μπορέσει να το κάνει πράξη. Βέβαια για παράδειγμα ο αγωγός ΤΑΡ θα είναι έτοιμος σε δύο χρόνια και ο IGB μπορεί επίσης να είναι έτοιμος σε δύο με τρία χρόνια, ο EastMed θα πάρει λίγο περισσότερο, αλλά τα πρώτα κοιτάσματα, πχ ο Πατραϊκός, το Κατάκολο και τα Ιωάννινα, μπορούν να εξορύσσονται και να αξιοποιούνται τα επόμενα δύο με τρία χρόνια, άρα αυτό είναι επίσης μια βάση αναφοράς.

12. Ποια χώρα κατά την άποψή σας έχει συγκριτικό πλεονέκτημα και κατά συνέπεια τις περισσότερες πιθανότητες να καταστεί διαμετακομιστικός κόμβος ενέργειας για την Ευρώπη, η Ελλάδα ή η Τουρκία και γιατί;

Στοιχεία απάντησης ερώτησης 12:

Χαράλαμπος Πίππος: Με βάση τα διαθέσιμα επίσημα ενεργειακά στοιχεία που προεκτέθηκαν και τη εξόχως ασταθή και προβληματική πολιτική περίοδο που διανύει η Τουρκία, καθίσταται σαφές ότι η Ελλάδα, όντας κράτος – μέλος του σκληρού πυρήνα της Ε. Ένωσης, παρά την τρέχουσα δύσκολη οικονομική συγκυρία που αναμένεται, όμως, σύντομα να βελτιωθεί, καθώς και κυρίως όντας ισχυρός πόλος πολιτικής σταθερότητας στην ευρύτερη περιοχή έναντι της γείτονος Τουρκίας, είναι η ευρωπαϊκή εκείνη χώρα που έχει το συγκριτικό πλεονέκτημα και κατά συνέπεια τις περισσότερες πιθανότητες να καταστεί διαμετακομιστικός κόμβος ενέργειας, όχι μόνο για την Ευρώπη, αλλα και για την ευρύτερη περιοχή της ΝΑ Ευρώπης.

Κωνσταντίνος Φίλης: Η Ελλάδα δεν μπορεί να υποκαταστήσει την Τουρκία, γιατί τα σχέδια τα οποία αφορούν στην Ελλάδα και δεν αφορούν στην Τουρκία είναι μόνο αυτό της Ανατολικής Μεσογείου προς το παρόν. Μπορεί στο μέλλον να έχουμε και ένα σχέδιο με το Ιράν, αλλά αυτή τη στιγμή είναι μόνο αυτό της Αν.Μεσογείου. Άρα λοιπόν, σε όλα τα άλλα σχέδια, η τύχη της Ελλάδας εξαρτάται από την τύχη της Τουρκίας, συνεπώς, έχουμε το πλεονέκτημα σε σχέση με την Τουρκία όσον αφορά τα κράτη της Αν. Μεσογείου, για τους λόγους που προαναφέρθηκαν, αλλά για τα υπόλοιπα έργα πρέπει να συνεργαστούμε με την Τουρκία, δεν μπορούμε να την αποκλείσουμε.

Γιάννης Μανιάτης: Η Τουρκία έτσι κι αλλιώς αποτελεί ενεργειακό κόμβο και πρέπει να αναγνωρίσουμε μια αντικειμενική γεωγραφική πραγματικότητα. Από την Τουρκιά

περνούν πολλοί αγωγοί και η γεωγραφική της θέση την διευκολύνει. Εμείς αυτό που λέμε σε όλους τους τόνους είναι ότι θα πρέπει να υπάρχει μια προσοχή από την πλευρά της Δύσης αλλά και της Ρωσίας, καθώς το να βάζουν όλα τα αυγά στο ίδιο καλάθι και δη σε μια χώρα η οποία αποδεδειγμένα είναι μια χώρα με υψηλό ρίσκο, είναι κάτι το οποίο δεν είναι σώφρον για τις οικονομικές και αναπτυξιακές πολιτικές, τόσο της Ευρώπης, όσο και της Ρωσίας και γι'αυτό ακριβώς εμείς διεκδικούμε μια ισόρροπη ανάπτυξη και σε επίπεδο αγωγών αλλά και σε θέματα άλλων ενεργειακών υποδομών. Τέλος, για να γίνει αντιληπτό το γεγονός ότι η Ελλάδα αποτελεί μια πιο ασφαλή επιλογή, πρέπει η ελληνική εξωτερική πολιτική αλλά και η ελληνική ενεργειακή διπλωματία να το τονίσουν, να το αναδεικνύουν και να το περνούν διαρκώς ως μήνυμα στους συνομιλητές μας και ενώ αυτό το είχαμε ξεκινήσει, τώρα τελευταία δεν το βλέπω να γίνεται με την ένταση που απαιτούν οι καταστάσεις. Σε κάθε περίπτωση εγώ είμαι βαθιά πεπεισμένος, ότι αν ακολουθήσουμε μια εθνικά υπεύθυνη ενεργειακή στρατηγική και διπλωματία η Ελλάδα πολύ σύντομα μπορεί να αποτελέσει ένα σπουδαίο ενεργειακό κόμβο ολόκληρης της Ευρώπης, γεγονός που θα μας αναβαθμίσει γεωπολιτικά και θα μας δώσει και συγκρητικά διαπραγματευτικά πλεονεκτήματα σε σχέση με τους δανειστές μας και τα υπόλοιπα θέματα εσωτερικής πολιτικής.

13. Ποιο έργο θεωρείται πιο ανταγωνιστικό και οικονομικά βιώσιμο για τη μεταφορά του φυσικού αερίου της Ανατολικής Μεσογείου στην Ευρώπη - έναν αγωγό μέσω Τουρκίας ή τον East-Med;

Στοιχεία απάντησης ερώτησης 13:

Χαράλαμπος Πίππος: Πιο ανταγωνιστικός και οικονομικά βιώσιμος, είναι, πάντα με βάση επίσημα εθνικά (ΔΕΠΑ) και Κοινοτιικά (Ε. ΕΠΙΤΡΟΠΗ) στοιχεία, ο ενταγμένος στα Έργα Κοινού (δηλ. Κοινοτικού) Ενδιαφέροντος (PCIs) αγωγός φυσικού αερίου EAST MED, έναντι ενός, απλά εικαζόμενου, "ανταγωνιστικού" έργου μέσω Τουρκίας.

Συγκεκριμένα, ο αγωγός EastMed εντάχθηκε στον Κατάλογο των Έργων Κοινού Ενδιαφέροντος (Projects of Common Interest – PCIs) της ΕΕ, το 2013. Βάσει του Ευρωπαϊκού Κανονισμού 347/2013, η συμμετοχή του σε αυτόν ανανεώθηκε το 2015. Την ίδια χρονιά ξεκίνησε η συγχρηματοδότησή του από την ΕΕ για τη Δράση «Eastern Mediterranean Natural Gas Pipeline - Pre-Feed Studies».

Το σύνολο των ανωτέρω συγχρηματοδοτούμενων μελετών που εκπονήθηκαν στο πλαίσιο των Pre-Feed Studies καταστούν σαφή την τεχνική εφικτότητα, την οικονομική βιωσιμότητα και την εμπορική ανταγωνιστικότητα του Έργου. Επίσης, επισημαίνουν την προστιθέμενη αξία του αγωγού EastMed, αλλά και το συμπληρωματικό του χαρακτήρα, στο πλαίσιο των προοπτικών εξαγωγής του φυσικού αερίου της Νοτιοανατολικής Μεσογείου για την ενίσχυση της ενεργειακής ασφάλειας της Ευρώπης.

Σύμφωνα με τις εν λόγω μελέτες, η σχεδιαζόμενη δυναμικότητα του αγωγού είναι 10 δισ. κυβ. μέτρα φυσικού αερίου (φ. α.) ετησίως, με δυνατότητα να ανέλθει στα 16 δισ. κυβ. μέτρα φ. α.. Σημειώνεται ότι ανάλογα έργα, αναφορικά με τη δυσκολία υλοποίησής τους λόγω του θαλάσσιου βάθους, είτε έχουν ήδη κατασκευασθεί και λειτουργούν με επιτυχία (αγωγός Medgas Αλγερία - Ισπανία), είτε είναι σε φάση έναρξης κατασκευής (αγωγός Galsi Αλγερία – Ιταλία).

Επισημαίνεται ότι η ανάπτυξη του αγωγού EastMed χαίρει εξαρχής της στήριξης τόσο των Κυβερνήσεων των κρατών από τα οποία θα διέρχεται, όσο και της ΕΕ, όπως προαναφέρθηκε.

Επιπρόσθετα, τα συμπεράσματα των προαναφερόμενων συγχρηματοδοτούμενων από την Ε.Ε. μελετών δίνουν νέα ώθηση στην ανάπτυξη του Έργου, μέσω της ανάληψης πρωτοβουλιών σε εθνικό και ευρωπαϊκό επίπεδο.

Μέσα στο νέο αυτό πλαίσιο, στις αρχές Απριλίου 2017 οι Υπουργοί Ενέργειας Ελλάδας, Κύπρου, Ισραήλ και Ιταλίας υπέγραψαν παρουσία του Ευρωπαίου Επιτρόπου Κλιματικής Αλλαγής και Ενέργειας Μιγκέλ Αρίας Κανιέτε Κοινή Διακήρυξη για την περαιτέρω συστηματική παρακολούθηση και προώθηση της ανάπτυξης του Έργου.

(Πηγή συνόλου στοιχείων εν λόγω απάντησης η σχετική δημοσίευση της ΔΕΠΑ: http://www.depa.gr/index3.php/content/article/002005007/539.html).

Κωνσταντίνος Φίλης: Η απάντηση είναι ότι ο EastMed μπορεί να είναι πιο ακριβός, μπορεί να έχει μεγαλύτερες τεχνικές δυσκολίες, λόγω του ότι μπαίνει σε μεγάλα βάθη, αλλά στην πραγματικότητα, έχει και γεωπολιτικά πλεονεκτήματα, λόγω της μη εμπλοκής της Τουρκίας, έχει και οικονομικά, διότι το αντίστοιχο τουρκικό σχέδιο, πέρα από τις επισφάλειες που δημιουργεί η εμπλοκή της Τουρκίας, πέρα του ότι

καθιστά την Τουρκία χώρα κλειδί για τη διαμετακόμιση του αερίου προς την Ευρώπη, άρα καθιστά την Ευρώπη όμηρο της Τουρκίας ως προς αυτό, είναι και ένα σχέδιο το οποίο είναι ακριβό, μπορεί όχι εξίσου ακριβό με τον EastMed, αλλά όχι και σημαντικά φθηνότερο, διότι πρέπει να φτιαχτεί καινούργιο σύστημα αγωγών μέσα στην Τουρκία προκειμένου να φτάσει μέχρι την ευρωπαϊκή Τουρκία και μετά να φύγει για την Ευρώπη, πράγμα το οποίο συνεπάγεται πολύ μεγάλο κόστος, οπότε, θα έλεγα ότι το προβάδισμα του EastMed είναι στα δικά μου μάτια σαφές, φοβούμαι όμως ότι δεν είναι τόσο σαφές στα μάτια αυτών που θα κλειθούν να πάρουν τις αποφάσεις, κυρίως αυτοί που βρίσκονται σήμερα στο Ισραήλ ή και σε άλλες χώρες της Ανατολικής Μεσογείου.

Γιάννης Μανιάτης: Είναι μια μεγάλη συζήτηση και υπάρχουν δυο διαφορετικές προσεγγίσεις. Υπάρχει η γνωστή «σύγκρουση» ανάμεσα στους οικονομιστές που θεωρούν ότι ο αγωγός από τα κοιτάσματα μέχρι τα παράλια της Τουρκίας είναι ο πιο οικονομικός και έτσι είναι αν υπολογίσουμε μόνο αυτό το μήκος, αλλά θα πρέπει να λάβουμε υπόψη μας ότι το μέτρο σύγκρισης δεν μπορεί να είναι ο αγωγός που θα φτάσει μέχρι τα παράλια της Τουρκίας αλλά και αποκλειστικός, καινούργιος αγωγός που πρέπει να κατασκευαστεί από τα παράλια της Τουρκίας και να διασχίσει όλη την Τουρκία, μέχρι τα σύνορα με την Ελλάδα ή τη Βουλγαρία προκειμένου να φτάσει το φυσικό αέριο στους ευρωπαίους καταναλωτές. Εάν λοιπόν, συνυπολογίσουμε τα θέματα του ρίσκου που δημιουργεί η Τουρκία ως χώρα και τα θέματα του μεγάλου αγωγού που πρέπει να κατασκευαστεί, τότε ο EastMed είναι ένας απολύτως ανταγωνιστικός αγωγός και σε σχέση με τον αγωγό προς την Τουρκία αλλά και σε σχέση με την κίνηση του φυσικού αερίου μέσω των δύο μονάδων LNG στην Αίγυπτο. Αυτό άλλωστε το αποδεικνύει και η πρόσφατη τεχνικοοικονομική μελέτη που εκπονήθηκε και η οποία αποδεικνύει πως και οι τρείς εναλλακτικές λύσεις είναι εξίσου ανταγωνιστικές και αρκεί πια να παρθούν οι αντίστοιχες αποφάσεις. Πάντως ο EastMed είναι σαφώς ανταγωνιστικός και είναι σαφώς μες στο παιχνίδι.

14. Μπορεί η ανάληψη του ρόλου του διαμετακομιστικού κόμβου ενέργειας να αναδείξει την Ελλάδα σε συγκρίσιμη περιφερειακή δύναμη; Ποια εμπόδια και ποιες αδυναμίες πρέπει να ξεπεραστούν ώστε να περάσει η χώρα μας σε αυτή τη φάση;

Στοιχεία απάντησης ερώτησης 14:

Χαράλαμπος Πίππος: Η δυνατότητα ανάδειξης της Ελλάδας σε συγκρίσιμη περιφερειακή δύναμη στην ευρύτερη περιοχή, με την ανάληψη του ρόλου της ως σημαντικού διαμετακομιστικού κέντρου ενέργειας στην ευρύτερη περιοχή, θεωρείται δεδομένη, εφόσον, παράλληλα με την υλοποίηση των σημαντικών στόχων περαιτέρω διαφοροποίησης και ενίσχυσης ενεργειακών πηγών και οδων διαμετακόμισης, διατηρηθούν οι διεθνείς και ευρωπαϊκές δεσμεύσεις της χώρας για το ξεπέρασμα της περιόδου σκληρής λιτότητας, ανακυκλούμενης ύφεσης και υψηλής ανεργίας, λόγω της οικονομικής κρίσης και των μνημονίων, μέσω αταλάντευτης προώθησης των απαιτούμενων διαρθρωτικών και εκσυγχρονιστικών αλλαγών, παγίωσης ευνοϊκού επενδυτικού κλίματος και συνέχισης και περαιτέρω εμβάθυνσης των πολυμερών περιφερειακών οικονομικών συνεργασιών της, κυρίως με χώρες των Δυτικών Βαλκανίων, του Ευξείνου Πόντου και της ΝΑ Ευρώπης, με το Ισραήλ και με τους Ευρωμεσογειακούς της Εταίρους, με τους τελευταίους διμερώς, πολυμερώς και στο πλαίσιο της "Ένωσης για τη Μεσόγειο" (βλ.: http://ufmsecretariat.org/).

Σύμφωνα, επίσης, με την περιφερειακή πολιτική που ασκεί το Υπουργείο Εξωτερικών (βλ.: http://www.mfa.gr/exoteriki-politiki/periferiaki-politiki/): "Η Ελλάδα βρίσκεται σε μια ιδιαίτερη γεωστρατηγική θέση: στις υπώρειες της Βαλκανικής Χερσονήσου, όπου ακόμη βρίσκεται σε εξέλιξη η διαδικασία της ευρωπαϊκής ολοκλήρωσης, στο θαλάσσιο σταυροδρόμι της Ανατολικής Μεσογείου που αποτελεί από τους αρχαιότατους ακόμα χρόνους τη γέφυρα επικοινωνίας – εμπορικής και πνευματικής – με τον κόσμο της Μέσης Ανατολής, και στην γεωγραφική απόληξη μιας κρίσιμης περιοχής, στην οποία σχεδιάζονται όλες οι μεγάλες οδεύσεις που θα εξασφαλίσουν την επάρκεια ενεργειακών πόρων για την Ευρώπη, τον Εύξεινο Πόντο και τον Καύκασο. Με αυτές τις περιοχές η Ελλάδα δεν συνέχεται μόνο γεωγραφικά. Η ελληνική παρουσία έχει βαθιές ιστορικές και πολιτιστικές ρίζες και είναι ακόμη και σήμερα εμφανής παντού, με όρους και πολιτικούς και οικονομικούς. Για το λόγο αυτό η Ελλάδα αναπτύσσει και εφαρμόζει μια συνεκτική περιφερειακή πολιτική που απώτατο στόχο έχει την εμπέδωση της ειρήνης και της ασφάλειας και την επέκταση της ευημερίας σε όλη την άμεση περιφέρειά της".

Η απαρέγκλητη τήρηση εν λόγω περιφερειακής πολιτικής της Ελλαδας, είναι βέβαιο ότι θα αποδώσει, επίσης, τους αναμενόμενους καρπούς της για την επίτευξη του στόχου.

Κωνσταντίνος Φίλης: Η Ελλάδα πρέπει να έχει μια σταθερότητα, όπως προείπαμε, πρέπει να έχει ένα σταθερό περιβάλλον φορολογικό, να δώσει κίνητρα στους επενδυτές, πρέπει να εξακολουθήσει να είναι στο στενό πυρήνα της ΕΕ, να εξακολουθήσει να είναι προβλέψιμη ως χώρα, να μην δημιουργεί δηλαδή επισφάλειες στον επενδυτή, ότι μπορεί δηλαδή να χάσει κάτι ή ότι μπορεί να επέλθει κάποιου είδους αβεβαιότητα ως προς την Ελλάδα. Από κει και πέρα αν προχωρήσουν τα σχέδια τα οποία έχουμε κατά νου η Ελλάδα μπορεί να είναι μια υπολογίσιμη δύναμη στο κομμάτι της ενέργειας ως προς τη διαμετακόμιση του προϊόντος. Αν τα πράγματα εξελιχθούν τόσο πολύ ώστε να μπορούμε να παράγουμε ενέργεια και μάλιστα σε ποσότητες οι οποίες θα είναι σημαντικές για τα ευρωπαϊκά δεδομένα, πράγμα το οποίο κατ'εμέ είναι πολύ δύσκολο, τότε εννοείται ότι η δύναμή μας και η ισχύς μας αυξάνεται.

Γιάννης Μανιάτης: Η απάντηση είναι ναι. Τα εμπόδια και οι αδυναμίες, είναι τα γνωστά εμπόδια και αδυναμίες μιας Ελλάδας, η οποία οφείλει να αντιληφθεί ότι στα θέματα της ενεργειακής διπλωματίας και της ενεργειακής στρατηγικής δεν επιτρέπεται να αλλάζει η εθνική στρατηγική όταν αλλάζουν οι κυβερνήσεις ή οι υπουργοί. Όσο πιο γρήγορα γίνει αυτό κατανοητό, τόσο καλύτερα για τη χώρα μας. Κατά τα άλλα όλα τα άλλα (φορολογικοί,πολιτικοί, δικαιικοί παράγοντες κτλ) επηρεάζουν μια μεγάλη επένδυση, όπως μια επένδυση για κοιτάσματα υδρογονανθράκων ή για έναν αγωγό. Αν δει κανείς διαχρονικά την πορεία που ξεκινήσαμε εμείς το 2010-2014, μέσα σε 4-5 χρόνια αντιμετωπίσαμε όλα τα θέματα, πρέπει να έχεις σύγχρονο θεσμικό πλαίσιο, πρέπει να έχεις ελκυστικό φορολογικό περιβάλλον, πρέπει να έχεις φορέα αξιόπιστο, ο οποίος θα συνομιλεί διαρκώς με τον υποψήφιο επενδυτή, πρέπει να έχεις φορέα, ο οποίος θα συνομιλεί με τις τοπικές κοινωνίες, ώστε να μην υπάρχουν αντιδράσεις εκεί που δεν υπάρχει αιτιολόγηση, πρέπει να έχεις αυστηρό θεσμικό πλαίσιο, πρέπει να έχεις συνέπεια και συνέχεια, έτσι ώστε ο επενδυτής να αισθάνεται ότι έρχεται σε μια χώρα οπου δεν υπάρχει προσωρινότητα και υπάρχει μια σταθερότητα, είναι όλες αυτές οι αδυναμίες που αντιμετωπίζουμε σε μεγάλες επενδύσεις, όταν αυτό γίνει τότε η Ελλάδα θα προχωρήσει με πολύ γρηγορότερο βήμα ανεξαρτήτου μνημονίων και εσωτερικών αδυναμιών αλλά με αισιοδοξία και υπερηφάνια προς τον υπόλοιπο κόσμο και όταν αυτό γίνει και καταλάβει το σημαντικό ρόλο που παίζει η ανάπτυξη της γεωπολιτικής μας θέσης, τότε θα μπορούμε να κάνουμε και πάρα πολλά πράγματα.

15. Σε ποιο βαθμό η μη οριοθέτηση ΑΟΖ εμποδίζει την μετεξέλιξη την Ελλάδας σε διαμετακομιστικό κόμβο ενέργειας (ποια έργα;);

Στοιχεία απάντησης ερώτησης 15:

Χαράλαμπος Πίππος: Δεν φαίνεται ότι υπάρχει συγκεκριμένο πρόβλημα που να συσχετίζει την ήδη δρομολογημένη μετεξέλιξη της Ελλάδας σε διαμετακομιστικό κόμβο ενέργειας, μέσω των σημαντικών ενεργειακών έργων κοινού (ευρωπαϊκού ενδιαφέροντος) που ήδη προωθούνται σταθερά -και με κοινοτική συγχρηματοδότηση-, με τα όποια εκκρεμή ζητήματα συνδέονται με την Αποκλειστική Οικονομική Ζώνη (ΑΟΖ) της χώρας.

Πρέπει, εξάλλου, να τονιστεί στο σημείο αυτό ότι τα ζητήματα της ΑΟΖ αποτελούν "υψηλή πολιτική" αρμοδιότητας του Υπουργείου Εξωτερικών, το οποίο μεριμνά διαχρονικά, σταθερά και αταλάντευτα για την οριστική διευθέτησή τους, με βάση το εθνικό και κοινοτικό δίκαιο και τις σχετικές διεθνείς συνθήκες, πρωτίστως τη Διεθνή Συνθήκη περί Δικαίου της Θάλασσαςη, την οποία έχει υπογράψει και η Ελλάδα.

Ειδικά όσον αφορά τις ΕλληνοΤουρκικές Σχεσεις, το Υπουργείο Εξωτερικών, μεταξύ άλλων, θεωρεί πως: " Η εξομάλυνση και βελτίωση των ελληνοτουρκικών σχέσεων, πέραν της σημασίας της στο διμερές επίπεδο, αποτελεί, επίσης, σημαντικό παράγοντα για τη σταθερότητα της Νοτιο-Ανατολικής Ευρώπης και της Ανατολικής Μεσογείου.

Η Ελλάδα αποδίδει μεγάλη σημασία στο σεβασμό της αρχής της καλής γειτονίας – που αποτελεί, εξ άλλου, πυλώνα της διαδικασίας της ευρωπαϊκής ολοκλήρωσης–, και καταβάλλει κάθε δυνατή προσπάθεια για την εμπέδωση και θεμελίωσή της.

Αποτελεί σταθερή επιδίωξη της Ελλάδας η μετατροπή της ελληνοτουρκικής σχέσης από αντιπαραθετική σε συνεργατική. Γι' αυτό και τείνει χείρα φιλίας στην Τουρκία, καλώντας την να συνεργασθεί, με πνεύμα συναινετικό και εποικοδομητικό, όπως αρμόζει σε γείτονες, για την πλήρη εξομάλυνση των ελληνοτουρκικών σχέσεων" (βλ.: http://www.mfa.gr/zitimata-ellinotourkikon-sheseon/) .

Στο πλαίσιο, εξάλλου του σταθερού ειδικού ενδιαφέροντος που αποδίδει το ΥΠ.ΕΞ στην απρόσκοπτη και εθνικά επωφελή προώθηση των ενεργειακών θεμάτων, μεταξύ άλλων, την Τετάρτη, 10 Μαΐου και ώρα 12:00, συγκαλείται το Εθνικό Συμβούλιο Εξωτερικής Πολιτικής (ΕΣΕΠ), υπό την προεδρία του Υπουργού Εξωτερικών, κ.

Νίκου Κοτζιά. Το κύριο θέμα που θα απασχολήσει το Συμβούλιο θα είναι οι εξελίξεις στον τομέα της ενέργειας. Στη συνεδρίαση θα λάβει μέρος ο Υπουργός Ενέργειας και Περιβάλλοντος, κ. Γιώργος Σταθάκης (βλ.: http://www.mfa.gr/epikairotita/eidiseis-anakoinoseis/sugklese-ethnikou-sumbouliou-exoterikes-politikes-upeks-10052017.html).

Κωνσταντίνος Φίλης: Όχι δεν την εμποδίζει, γιατί ακόμη και χωρίς την οριοθέτηση ΑΟΖ, η Ελλάδα αυτή τη στιγμή μπορεί, διότι ο EastMed για τον οποίο μιλάμε, καθώς όλα τα υπόλοιπα έργα είναι χερσαία, δηλαδή ο αγωγός μπορεί να γίνει αυτή τη στιγμή και χωρίς την οριοθέτηση της ΑΟΖ, δεν είναι υποχρεωτικό να υπάρχει οριοθέτηση της ΑΟΖ για να προχωρήσει η πόντηση ενός υποθαλάσσιου αγωγού ή υποθαλάσσιου καλωδίου, άρα η απάντηση είναι ότι μπορείς να προχωρήσεις χωρίς οριοθέτηση ΑΟΖ σε αυτό το κομμάτι, τώρα αν είναι οριοθετημένα τα θαλάσσια σύνορα τόσο το καλύτερο, αλλά ακόμα και αν δεν υπάρχουν οριοθετημένα θαλάσσια σύνορα αυτό δεν επηρεάζει τουλάχιστον προς το παρόν αυτή την προοπτική. Ακόμα όμως και για την εκμετάλευση των υδρογονανθράκων η ΑΟΖ δεν παίζει κανένα απολύτως ρόλο.

Γιάννης Μανιάτης: Η ΑΟΖ είναι μια σπουδαία εθνική προεραιότητα που πάντα υπάρχει στις ελληνικές κυβερνήσεις αλλά το πότε θα κυρηχθεί ελληνική ΑΟΖ προσδιορίζεται με βάση τις εθνικές προτεραιότητες και ανήκει στην αρμοδιότητα του πρωθυπουργού, του υπουργού εξωτερικών και του υπουργικού συμβουλίου, όμως έχουμε το θετικό ότι το διεθνές δίκαιο σε σχέση με τα θέματα της ΑΟΖ είναι με το μέρος μας, άρα αυτό αποτελεί μια θετική κατάκτηση. Επιπλέον το 2012 με το νόμο 4001 (ν. Μανιάτη) καταφέραμε και στο άρθρο 156 περάσαμε την διατύπωση για τη μέση γραμμή ίσων αποστάσεων της ΑΟΖ, που είναι μια επίσης σπουδαία κατάκτηση. Η κατάκτηση αυτή συνεχίστηκε όταν δημοσιεύσαμε στην εφημερίδα της ΕΕ τον χάρτη με τις έρευνες υδρογονανθράκων στο Ιόνιο και νότια της Κρήτης, όπου εκεί με τρείς χώρες Αλβανία, Ιταλία και Λιβύη, προσδιορίσαμε περιοχή αναφοράς και έρευνας με βάση αυτό ακριβώς το κριτήριο. Έτσι έχουμε κάνει ορισμένα βήματα. Το άρθρο αυτό το χρησιμοποιεί το ελληνικό υπουργείο εξωτερικών στις διαρηματικές ανακοινώσεις του στον Οργανισμό Ηνωμένων Εθνών κάθε φορά που η Τουρκία παραβιάζει τα εθνικά χωρικά ύδατα. Θέλω επομένως να πιστεύω ότι είμαστε σε καλό δρόμο προς αυτή την κατεύθυνση. Η Υφαλοκρηπίδα είναι γνωστό ότι είναι επαρκής για να προχωρήσεις στα θέματα των ερευνών, αλλά πάντα στα θέματα του διεθνούς δικαίου που είναι σύνθετα ζητήματα, θα πρέπει να ακούμε τι μας λένε και οι

εξαιρετικά έμπειροι διπλωμάτες που έχει το ελληνικό υπουργείο εξωτερικών τους οποίους και εμπιστεύομαι.